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EVALUATION OF SYMPATHECTOMY IN ARTERIOSCLEROTIC PERIPHERAL VASCULAR DISEASE

Chairman's Address

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In terms of incidence and morbidity arteriosclerosis constitutes the most important form of peripheral vascular disease and consequently deserves the most serious consideration. However, until relatively recently the prevailing attitude characterizing the therapeutic approach to this problem was almost fatalistic. Among the more important factors which have contributed to this point of view are the concept that arteriosclerosis is an inevitable consequence of aging, and therefore an irreversible process, and the general belief that sympathectomy was indicated only in peripheral vascular disturbances characterized by vasospastic phenomena with little or no organic component. With the encouraging results which followed the cautious extension of this procedure in selected cases of this disease greater interest was aroused in the potential benefits of this form of therapy. During the past decade numerous reports have appeared attesting to the value of this procedure in obliterative vascular sclerosis and reflecting a more hopeful outlook in therapy.[1]

ANALYSIS OF DATA

This report is concerned with an evaluation of our experience with this problem based on an analysis of 146 consecutive cases of arteriosclerotic peripheral vascular disease of the lower extremities treated by lumbar sympathectomy at the Charity Hospital in New Orleans. The procedure was performed bilaterally in 55 cases, so that in the entire series there was a total of 201 sympathectomies. The operation was generally performed through an anterolateral, extraperitoneal, muscle-splitting approach as previously described,[2] with removal of all the lumbar sympathetic ganglions and chain overlying the second to the fourth lumbar vertebrae. Prior to sympathectomy all patients had been treated by the usual conservative measures with little or no success. All patients were followed six months or longer; 75 per cent were followed more than one year, and 38 per cent from two to four or more years. Although oscillometric, plethysmographic and thermometric studies were done in a number of cases, in most instances the generally accepted clinical criteria were employed in the diagnosis and classification of the cases. Because the presence of diabetes has been generally considered to contribute further to the seriousness of the problem and the difficulties of management, the patients were divided accordingly into diabetic and nondiabetic groups for purposes of comparison.

Age.—The age distribution was about the same for the diabetic and nondiabetic groups of patients (fig. 1). Almost 90 per cent of the patients fell into the sixth, seventh and eighth decades. The youngest and oldest patients were 40 and 82 years of age, respectively, and the average age was 60 years.

Sex.—Arteriosclerosis uncomplicated by diabetes is predominantly a disease of males, but in the presence of diabetes this difference in sex incidence is much less pronounced. Thus, in our series the ratio of males to females among the nondiabetic patients was about 5 to 1, whereas among those with diabetes it was almost 1 to 2 (fig. 2). This variation in sex incidence of diabetic and nondiabetic patients is probably a reflection of the general observation that diabetes is more frequently encountered in females and arteriosclerosis occurs far oftener in diabetic than in nondiabetic patients.[3]

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3. Dry, T. J., and Hines, E. A., Jr.: The Role of Diabetes in the Development of Degenerative Vascular Disease: With Special Reference to the Incidence of Retinitis and Peripheral Neuritis, Ann. Int. Med. **14:** 1893-1902 (April) 1941.

Race.—No significant racial factor was observed in our series, as far as the white and Negro races are concerned, since their incidence approximated those of the population for the two races in the hospital (fig. 3).

Duration of Symptoms.—Analysis of the duration of symptoms revealed several interesting observations, some of which were unexpected. For one thing, among both the diabetic and nondiabetic groups symptoms existed for a significantly longer

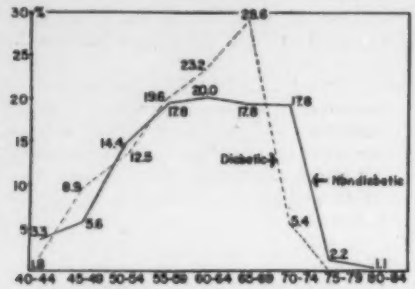

Fig. 1.—Age distribution of diabetic and nondiabetic patients. The average age for the diabetic was 60.0 and for the nondiabetic 61.5 years.

period of time among the unamputated than among the amputated patients (fig. 4). For another, the duration of symptoms was much shorter for the diabetic than for the nondiabetic groups. The former observation was somewhat unexpected. Arteriosclerosis is generally considered a chronic, progressive, degenerative process which, as a consequence of occlusion of the arterial lumens, leads ultimately to ischemic necrosis of the part supplied by these vessels. It might be reasonably expected, then, that patients requiring amputation would represent the end result of long-standing disease, but in our series, at least, this has not been true. Eighty-five per cent of the patients requiring ablation had frank gangrene when first seen; yet the duration of symptoms was shortest in this group. This would suggest that there exists a more rapidly progressive form of the disease which is highly resistant to therapy.

There is a striking difference in the duration of symptoms between the diabetic and nondiabetic groups of patients. The shorter period for the former group may be accounted for by several factors. The presence of diabetes would seem to hasten, and in a sense to telescope, the development of manifestations

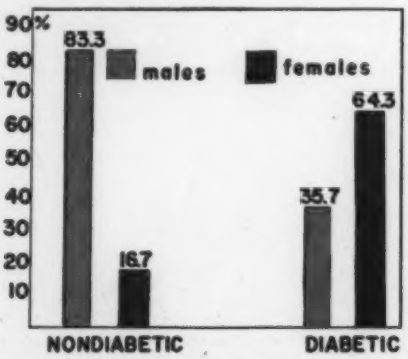

Fig. 2.—Incidence of lumbar sympathectomy by sex of patients.

of arterial insufficiency and thus to cause the patient to seek medical attention earlier than he might otherwise. Perhaps the propensity of the diabetic patient for cutaneous infections is also a significant factor in this connection. Furthermore, there is a tendency for the diabetic patient to be more closely supervised, so that the likelihood of his receiving medical attention at the first sign of vascular impairment or infection is greater.

Results of Therapy.—For purposes of simplicity and convenience of analysis the cases were divided into three categories, (1) no gangrene, (2) impending gangrene and (3) frank gangrene. The first group consisted of patients whose arterial deficiency was manifested by pain, either in the form of intermittent claudication or ischemic neuritis, but without evidence of alterations in the skin. Although the majority of these patients had pronounced restriction in walking distance and absence of peripheral pulses, they represent the least severe form of the disease and correspond closely to grade 1 of the classification proposed by de Takats and associates.[1b] The second group, impending gangrene, was comprised of patients who had, in addition to the manifestations previously noted, definite cutaneous changes including particularly pronounced discoloration, atrophy, glossy edema and other evidences of capillary stasis and severe arterial deficiency. The criteria for determining the selection of

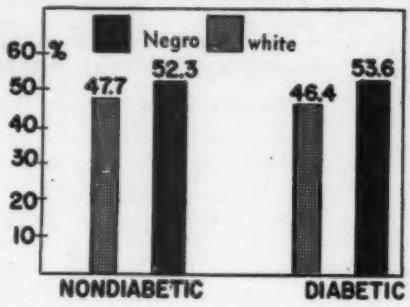

Fig. 3.—Incidence of lumbar sympathectomy by race of patients.

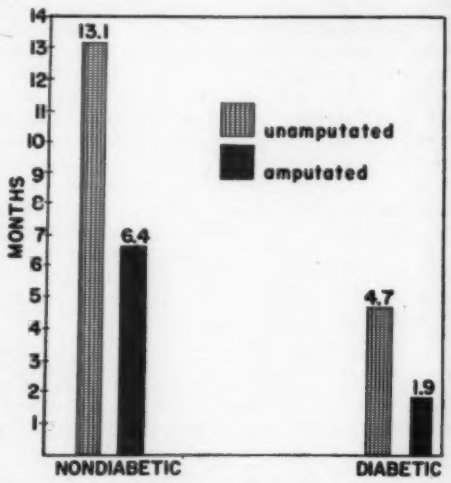

Fig. 4.—Average duration of symptoms in patients undergoing lumbar sympathectomy.

patients for the category of frank gangrene were obvious except for those with diabetes. In this group every effort was made to distinguish a primarily infectious from a gangrenous process.

Again for the sake of simplicity and ease of analysis, results of therapy were classified into three categories, (1) improved, (2) unimproved and (3) amputated. Although in some instances certain special studies, such as oscillometric, thermometric and plethysmographic observations, were employed in assessing the results, in the majority of cases this was done on the basis of definite clinical evidence including relief of symptoms, increased walking distance, ability to return to work, improvement in color, texture and temperature of the skin, and salvage of an extremity in which impending or frankly gangrenous changes were present prior to operation. By amputated is meant a major amputation, i. e., above the ankle. If there was any doubt about the result, the case was classified as unimproved. For example, in a few instances even of frank gangrene in which

amputation was not required after the sympathectomy the result was classified as unimproved because, despite salvage of the extremity, there persisted other severe manifestations that were more or less incapacitating. Furthermore, in order to provide a more critical evaluation of therapy, the results were assessed at the end of the follow-up period rather than immediately after discharge of the patient from the hospital following sympathectomy. In some instances apparent improvement occurred for a varying period of time after operation but ultimately, for example, at the end of six months or a year, the patient returned with ischemic necrosis necessitating amputation. Such a case was classified as amputated. It is, of course, recognized that by the rigid adherence to these criteria in assessing the results of therapy certain benefits of treatment, such as temporary salvage or prolongation of a viable extremity, better control of an infectious process and the ability to provide a low rather than a high amputation, are excluded from the final results of therapy. However, experience has emphasized the need for a rigidly objective and critical attitude in the assessment of results of treatment in peripheral vascular disease if accurate evaluation is to be achieved.

The best results were, of course, obtained in patients with the least severe disease, i. e., those in the "no gangrene" category in both the nondiabetic and diabetic groups (table 1). Even among the patients with impending gangrene a gratifying incidence of improvement was achieved in more than three fourths of the cases. It may also be observed that among the patients with frank gangrene it was possible to secure a viable, useful extremity in almost a fourth of the group without diabetes and with frank gangrene. Transmetatarsal amputation, as described by McKittrick and co-workers,[4] was done in eight patients with salvage of the extremity in three. There were no operative deaths in the entire series.

COMMENT

In general, the results obtained in this series of cases are similar to those reported by others. Although no controls are available for purposes of comparison, it seems reasonable, on the basis of this experience and the determined effort to provide a critical evaluation of the results of therapy, to make certain observations and to draw certain conclusions concerning the value as well as the limitations of sympathectomy in arteriosclerotic peripheral vascular disease. Certainly all our previous experience, as well as that of others,[5] has indicated that amputation is almost invariably required in impending as well as frank gangrene and that deaths were by no means unusual. Indeed, 10 to 12 years ago the mortality rate after amputations ranged from approximately 15 to 30 per cent.[5]

Much more impressive results probably could have been obtained had we continued to employ sympathectomy as we employed it originally, that is, in carefully selected cases. With increasing experience, however, the indications for operation were broadened. It was found that even after frank gangrene had developed sufficient improvement in circulation might be achieved to secure arrest of the process with complete healing and minimal loss of tissue and that if amputation should be necessary, a functioning extremity might be preserved because of use of a less radical operation.

TABLE 1.—*Results of Sympathectomy in Nondiabetic and in Diabetic Group*

	Nondiabetic				Diabetic			
Classification	No.	Improved	Unimproved	Amputated	No.	Improved	Unimproved	Amputated
No gangrene	63	53 (84.1%)	8 (12.7%)	2 (3.2%)	27	24 (88.9%)	2 (7.4%)	1 (3.7%)
Impending gangrene	19	15 (78.9%)	0	4 (21.1%)	9	7 (77.8%)	1 (11.1%)	1 (11.1%)
Frank gangrene	42	10 (23.8%)	4 (9.5%)	28 (66.7%)	41	19 (46.3%)	5 (12.2%)	17 (41.5%)
Total	124	78 (62.9%)	12 (9.7%)	34 (27.4%)	77	50 (64.9%)	8 (10.4%)	19 (24.7%)

Age.—Age is no longer considered a contraindication to sympathectomy. Almost 60 per cent of our patients were 60 years of age or over, and 15 per cent were more than 70 years of age. Sympathectomy, however, is perhaps less frequently indicated in the elderly because they are more liable to have other more disabling disturbances. In those patients already incapacitated by cardiac or other disorders the relief from peripheral vascular symptoms which might follow sympathectomy would be insignificant unless there were pressing indications for surgical therapy, such as constant intractable pain, progressive infection or gangrene.

Bilateral Operation Preferable.—Although symptoms usually appear first on one side, the arteriosclerotic process generally involves the vessels of both lower

in almost half of those with diabetes. The strikingly better results obtained among the diabetic patients in this category suggest that the distinction between a truly infectious and an actually gangrenous process may not always have been accurately made. These results also suggest that the severity of ischemic manifestations in the diabetic patient may not accurately reflect the degree of the occlusive process in the vascular bed. The presence of diabetes may tend simply to accentuate the manifestations of ischemia. In other words, although the patient with diabetes may have clinical manifestations equally severe and comparable to those of another without diabetes, the underlying occlusive vascular process may be less severe in the former than in the latter. This hypothesis gains some support from the previously observed differences in the duration of symptoms for the two groups of patients. In any case the diabetic patient certainly has an equally good chance of obtaining benefit from this form of treatment as the nondiabetic, for a comparison of the results in these two groups in our entire series reveals no essential difference (table 2). Definite improvement was obtained in almost two thirds of the cases, and only about a fourth of the patients in each group required amputation. A viable, useful extremity was secured in 78.5 per cent of the 28 patients with impending gangrene and in 35 per cent of the 83 patients

TABLE 2.—*Total Results of Sympathectomies in Diabetic and Nondiabetic Groups*

Classification	No. of Sympathectomies	Improved	Unimproved	Amputated
Nondiabetic	124	78 (62.9%)	12 (9.7%)	34 (27.4%)
Diabetic	77	50 (64.9%)	8 (10.4%)	19 (24.7%)
Total	201	128 (63.7%)	20 (9.9%)	53 (26.4%)

4. McKittrick, L. S.; McKittrick, J. B., and Risley, T. S.: Transmetatarsal Amputation for Infection or Gangrene in Patients with Diabetes Mellitus, Ann. Surg. **130**: 826-840 (Oct.) 1949.

5. (*a*) Veal, J. R.: Factors in the Mortality Rate of Arteriosclerotic Gangrene: Comparative Study of 214 Cases of Surgical Intervention, J. A. M. A. **110**: 785-789 (March 12) 1938. Faxon, H. H.: Major Amputation for Advanced Peripheral Arterial Obliterative Disease, ibid. **113**: 1199-1203 (Sept. 23) 1939. (*b*) McKittrick, L. S.: Diagnosis and Management of Chronic Obliterative Vascular Disease, ibid. **113**: 1223-1227 (Sept. 23) 1939. (*c*) de Takats, G., and Reynolds, J. T.: Amputation for Peripheral Vascular Disease, Arch. Surg. **40**: 253-270 (Feb.) 1940. Hines, E. A., Jr., and Barker, N. W.: Arteriosclerosis Obliterans: A Clinical and Pathologic Study, Am. J. M. Sc. **200**: 717-730 (Dec.) 1940. Macey, H. B., and Bickel, W. H.: Amputation of the Lower Extremities in Occlusive Arterial Diseases, Surg., Gynec. & Obst. **74**: 821-827 (April) 1942. Campbell, K. N., and Harris, B., quoted by Blain, A., III, and Campbell, K. N.: Lumbar Sympathectomy for Arteriosclerosis Obliterans: Rationale and Results, Surgery **25**: 950-962 (June) 1949.

extremities. For this reason and because an additional burden may be subsequently placed on the apparently symptomless extremity, we have come to believe that the operation should be done bilaterally unless there is some definite contraindication. The operating time is not prolonged significantly, and the additional risk of a subsequent anesthetic and operation is avoided. In the patients treated in this manner and followed for long periods it has been gratifying to observe the paucity of symptoms in the prophylactically treated extremity.

Good Results in Diabetics.—The high incidence of good results and the definite improvement in circulation which has followed sympathectomy in the diabetic patients would suggest that it is a particularly useful procedure in these circumstances. McKittrick [6b] among others has emphasized the value of prompt attention to infections of the feet and the careful performance of minor amputations in the management of these patients. Our experience leads us to believe that in many of these patients with localized infections of gangrenous processes sympathectomy provides sufficient improvement in the circulation to permit greater ease in control of infection and rapid arrest of the ischemic process with complete healing and minimal loss of tissue. It would also appear to reduce the incidence of subsequent major amputation.

Sympathetic Block.—In our early experience with sympathectomy a good deal of reliance was placed on the use of sympathetic block as a preliminary procedure to test the value of sympathectomy, but with increasing experience we soon realized, as did others, that this is not an entirely dependable test in this type of peripheral vascular disease. Vasospasm is not always a prominent factor in degenerative arterial disease, and the maximum effects of interruption of the sympathetic pathways for the production of vasodilatation require a much longer period than can be secured by temporary sympathetic block. Numerous patients have been observed in whom little or no immediate vasodilatation followed the block but in whom sympathectomy was followed by gradually increasing improvement in the circulation which reflected slowly developing vasodilatation and collateral circulation. Perhaps the one group of patients in whom the test may be useful in determining the value of sympathectomy is that with severe, intractable pain or ischemic neuritis. In these circumstances if a properly performed block provides no relief of pain it is doubtful that the sympathectomy will be any more effective.

Gangrene.—Several observers [6] have directed attention to the occasional occurrence of gangrene after sympathectomy in patients with advanced occlusive arteriosclerosis. This has been explained on the basis of Popoff's [7] suggestion that arterial blood may be shunted from the capillary system directly into the veins through the opening up, as a consequence of sympathectomy, of the arteriovenous anastomoses described by Sucquet [8] and Hoyer.[9] On this basis and their experience with four cases of gangrene following sympathectomy, Freeman, Leeds and Gardner [6b] have expressed the belief that sympathectomy may be contraindicated in cases of severe obliterative vascular disease with low vasomotor tone or without evidence of abnormal vasoconstriction. These observers recognized, however, that this concept was still hypothetic and without adequate proof. As pointed out by Smithwick,[10] a study of these cases suggests that recent acute vascular occlusion had occurred and inadequate collateral circulation was present at the time of operation. Moreover, serious objections to this concept lie in the fact that the occurrence of gangrene following sympathectomy in cases of advanced obliterative arterial disease is relatively uncommon and in the fact that most of these patients have low vasomotor tone but often show slow but progressive improvement in circulation after sympathectomy. In our experience frank gangrene developed rather rapidly after sympathectomy in only one patient with impending gangrene. In this case, however, the history and short duration of symptoms suggested the occurrence of acute vascular occlusion with progressive thrombosis and inadequate collateral circulation. The operation, but not necessarily the sympathectomy per se, may have been an additional factor in furthering the occlusive and ischemic process.

Theoretical Objections to Sympathectomy.—In this connection it is pertinent to consider the theoretical objections to sympathectomy advanced from time to time and consisting in the belief, derived from certain experimental observations, that the resultant vasodilatation takes place in the skin and not in the muscle, and consequently that blood may be diverted from the muscles to the skin. As emphasized by Learmonth,[11] this hypothesis does not withstand investigation. For one thing, results of studies in man to determine blood flow in muscle and skin in these circumstances have been contradictory and inconclusive.[12] For another, this hypothesis does not conform to clinical experience. Intermittent claudication is not worsened by sympathectomy; it is usually benefited. Finally, it should be realized that the major threat in patients with arteriosclerotic peripheral vascular disease stems primarily from a deficiency in the cutaneous circulation. Impending or actual gangrene occurs first in the skin, not in the muscle. This is the major cause for amputation, not intermittent claudication. It is therefore apparent that in these circumstances improvement in blood flow through the skin assumes major importance, a fact which enhances rather than depreciates the value of sympathectomy.

Contraindications.—On the basis of this experience we believe that sympathectomy is the method of choice in the treatment of arteriosclerotic peripheral vascular disease unless definite contraindications to operation

6. (a) Atlas, L. N.: Lumbar Sympathectomy in the Treatment of Peripheral Arteriosclerotic Disease, Am. Heart J. **23**: 493-497 (April) 1942. (b) Freeman, N. E.; Leeds, F. H., and Gardner, R. E.: Sympathectomy for Obliterative Arterial Disease: Indications and Contraindications, Ann. Surg. **126**: 873-894 (Dec.) 1947.

7. Popoff, N. W.: The Digital Vascular System, Arch. Path. **18**: 295-330 (Sept.) 1934.

8. Sucquet, J.-P.: Anatomie et physiologie: Circulation du sang: D'une circulation dérivative dans les membres et dans la tête chez l'homme, Paris, A. Delahaye, 1862.

9. Hoyer, H.: Über unmittelbare Einmündung kleinster Arterien in Gefässaste venösen Charakters, Arch. f. mikr. Anat. **13**: 603, 1877.

10. Smithwick, R. H.: Surgery of the Autonomic Nervous System, New England J. Med. **240**: 543-551 (April 7) 1949.

11. Learmonth, J.: Collateral Circulation: Natural and Artificial, Surg., Gynec. & Obst. **90**: 385-392 (April) 1950.

12. (a) Barcroft, H.; Bonnar, W. M.; Edholm, O. G., and Effron, A. S.: On Sympathetic Vasoconstrictor Tone in Human Skeletal Muscle, J. Physiol. **102**: 21-31 (June 30) 1943. Cohen, S. M.: Traumatic Arterial Spasm, Lancet **1**: 1-6 (Jan. 1) 1944. Siddons, A. H. M.: Sympathetic Block in Vascular Injuries: Review, ibid. **2**: 77 (July 21) 1945. Barcroft, H., and Edholm, O. G.: Sympathetic Control of Blood-Vessels of Human Skeletal Muscle, ibid. **2**: 513-515 (Oct. 12) 1946. Stein, I. D.; Harpuder, K., and Byer, J.: Reactivity of Blood Vessels in the Sympathectomized Human Leg, Am. J. Physiol. **158**: 319-325 (Aug. 1) 1949. (b) Stone, P. W., and Cooper, F. W., Jr.: Treatment of Experimental Acute Arterial Insufficiency: A Comparison of the Sympatholytic Agent Priscoline (2-Benzyl-4,5-Imidazoline Hcl) and Sympathectomy, Surgery **27**: 572-583 (April) 1950. (c) Murphy, R. A., Jr.; McClure, J. N.; Cooper, F. W., Jr., and Crowley, L. G.: The Effect of Priscoline, Papaverine and Nicotinic Acid on Blood Flow in the Lower Extremity of Man: A Comparative Study, ibid. **27**: 655-663 (May) 1950.

exist. These include particularly severe cerebral, cardiac, renal or pulmonary involvement, a far advanced and rapidly progressive process, and pronounced atrophic changes in the limb. The presence of intractable pain or severe ischemic neuritis which cannot be relieved by sympathetic block should also be regarded as a contraindication. The most suitable subjects for sympathectomy are those with manifestations of the more slowly progressive forms of the disease with moderate degrees of involvement, but highly gratifying results may also be achieved even in patients with impending or actual gangrene, although not as frequently as in the former group.

Rationale and Value of Sympathectomy.—Finally, we believe that these observations provide additional support of the rationale and value of sympathectomy in arteriosclerotic peripheral vascular disease. As emphasized previously in a consideration of the rationale of sympathectomy in peripheral vascular disease, it must be regarded not as a direct attack on the cause of the disturbances but rather as a means of correcting or counteracting the effects of the disease, which take the form of diminution in the circulation of the part.[1d] It is based on sound physiologic principles consisting essentially in the release of constrictor tonus, which may or may not be excessive, depending on the type and stage of the disease. By this means it permits maintenance of the maximum degree of vasodilatation in the denervated area, thus producing an increase in the volume of the local vascular bed and consequent improvement in the local circulation. In this respect the objective of the procedure conforms to the concept of hemodynamics to which the term hemometakinesia[13] has been applied and thus provides a further rational basis for sympathectomy. This concept is derived from certain observations concerning the physiologic features of the circulation which establish the presence of spontaneous and even rhythmic fluctuations in the volume of organs primarily attributable to changes in the volume of blood within the part. These fluctuations of the blood volume in different parts of the body can occur without any alterations in the total blood volume or cardiac output by an adjustment of the vascular bed, which permits simultaneously an increase in the volume of blood (through vasodilatation) of one part of the body and a corresponding decrease (through vasoconstriction) elsewhere. This compensatory process, permitting the "borrowing and lending" of blood by various tissues to meet variations in requirements, is indicative of a well regulated mechanism designed to permit the body to utilize its limited total blood volume in the most efficient manner. The sympathetic nervous system plays an important role in this mechanism of control and regulation of the peripheral vascular bed. Interruption of the sympathetic pathways to the part removes the vasoconstrictor factor in this mechanism, resulting in maximum vasodilatation in the vascular bed of the affected part. Other means of producing such vasodilatation by the use of vasodilator agents administered systemically have long been attempted with little success. These agents for the most part produce transitory and varying degrees of generalized vasodilatation. In most peripheral vascular disturbances, however, the impairment in circulation is usually localized to one or two peripheral parts. Accordingly, the therapeutic effort should rationally be directed not toward the production of vasodilatation of the entire vascular bed but rather toward the production of local vasodilatation limited to the part in need of more blood. These are not alone theoretical considerations; they are supported by both clinical and experimental observations. Although some observers have reported favorable results following the use of certain generalized vasodilator agents, we have not been able to confirm these observations.[14] Indeed, our studies on peripheral blood flow conducted under controlled atmospheric conditions revealed that none of these vasodilator agents could consistently produce in a local peripheral part vasodilatation equal in degree and duration to that produced by sympathetic denervation of the part.[14] More recent reports have confirmed these observations.[15]

13. Ray, T.; Burch, G. E., and DeBakey, M.: The "Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and Its Therapeutic Application in Peripheral Vascular Disturbances, New Orleans M. & S. J. **100**: 6-15 (July) 1947. DeBakey, M. E.; Burch, G.; Ray, T., and Ochsner, A.: The "Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and Its Therapeutic Application in Peripheral Vascular Disturbances, Ann. Surg. **126**: 850-865 (Dec.) 1947.

14. DeBakey, M. E., in discussion on Coller, F. A., and others: Tetra-Ethyl-Ammonium as Adjunct in Treatment of Peripheral Vascular Disease and Other Painful States, Ann. Surg. **125**: 729-755 (June) 1947. Footnote 13.

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SUMMARY

1. An evaluation of the results of lumbar sympathectomy in the treatment of arteriosclerotic peripheral vascular disease is presented on the basis of 146 consecutive patients, 55 of whom had bilateral involvement. All patients were followed at least six months, three fourths of the patients more than one year and 38 per cent from two to four or more years. Results of therapy were evaluated at the end of the follow-up period.

2. The cases were divided into three categories, (1) no gangrene, (2) impending gangrene and (3) frank gangrene, according to the severity of involvement. They were further subdivided into those with and without diabetes.

3. The best results were obtained in patients with the least severe disease, over 85 per cent showing definite improvement. A gratifying incidence of improvement was also achieved among more than three fourths of the patients with impending gangrene. Even among the patients with frank gangrene definite improvement with salvage of the extremity was secured in 35 per cent of cases. A comparison of the results among the diabetic and nondiabetic groups revealed no essential difference except in the category of frank gangrene, in which a somewhat higher incidence of improvement was observed among the diabetic patients. There were no operative deaths in the entire series.

4. Sympathetic block as a preliminary procedure to test the value of sympathectomy is not an entirely dependable test, except perhaps in patients with severe intractable pain or ischemic neuritis.

5. Sympathectomy is considered the method of choice in the treatment of arteriosclerotic peripheral vascular disease unless there exist definite contraindications to operation, such as severe cardiac, cerebral, renal or pulmonary involvement, a far advanced and rapidly progressive process, and pronounced atrophic changes in the extremity.

SHAKESPEARE'S KNOWLEDGE OF CHEST DISEASES

Chairman's Address

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One of the most zealous students of the Bard of Avon, Mary Cowden Clarke, says that the brightest ornament of the British nation is the genius of Shakespeare. Probably everyone will admit that he was one of the greatest geniuses the Anglo-Saxon race has ever produced, if not the greatest. His grasp of the details of all phases of knowledge and of life is astounding. As far as is known he never studied medicine, but his comprehension of medicine and disease compares favorably with that of his physician contemporaries, who were none too well versed in scientific medicine themselves. The poet's medical knowledge must be viewed, however, in the light of the actual medical knowledge and practice prevalent among the physicians of his day. Licensure had just been introduced, and medicine was indeed embryonic. Harvey first mentioned to his students his ideas of the circulation during the week of Shakespeare's death and published the details of his immortal discovery 12 years later.

Probably the knowledge of chest diseases was less advanced around the beginning of the seventeenth century than was medicine generally. Certainly Shakespeare's references to chest conditions are fewer than to almost any other group of diseases. He does, however, make many references which are of interest to chest specialists.

The lungs are referred to 19 times in the plays and twice in "A Lover's Complaint." In addition to mention of the respiratory function of the lungs, there are five instances that relate them to mirth and laughter. For instance, when Alonzo upbraids Gonzalo for describing his impossible utopia, the latter replies, "I . . . did it to minister occasion to these gentlemen, who are of such sensible and nimble lungs that they always use to laugh at nothing" (Tempest, II, i). And Armado says, "The heaving of my lungs provokes me to ridiculous smiling." (Love's Labor's Lost, IV, i). Also, the melancholy Jaques, after reciting the fool's comments on the dial and the aging process, says:

> When I did hear
> The motley fool thus moral on the time,
> My lungs began to crow like chanticleer,
> That fools should be so deep-contemplative,
> And I did laugh sans intermission
> An hour by his dial.
>
> *As You Like It*, II, vii.

Contrariwise, another reference suggests that sorrow and regret may be pulmonary in origin: "Hallowed with sighs that burning lungs did rise" (Lover's Complaint, line 228).

There are five references which imply that speech is in part a function of the lungs, as: "My lungs coin words" (Coriolanus, III, i), or, as when the host of the Garter Inn calls to Falstaff, "Bully Sir John! Speak from thy lungs" (Merry Wives of Windsor, IV, v).

Eight instances seem to refer to pulmonary physiology or, rather, pulmonary pathology, as: "Lungs and rotten ones" (Tempest, II, i), "Wheezing lungs" (Troilus and Cressida, V, i), "Infected lungs" (Pericles, IV, vi) and "That sad breath his spongy lungs bestow'd" (Lover's Complaint, line 326).

That the poet comprehended the possibility of pneumonia as a complication of measles is evident in:

> So shall my lungs
> Coin words till their decay against those measles
> Which we disdain should tetter us!
>
> *Coriolanus*, III, i.

The dyspnea incident to approaching death is evident when Henry IV on his deathbed says:

> My lungs are wasted so
> That strength of speech is utterly denied me.
>
> *2 Henry IV*, IV, v.

Shakespeare knew the condition we call asthma. We have already mentioned "wheezing lungs," which, from the context in this instance, he must have believed to be a symptom of syphilis. Also, he uses the term "tisick" when Pandarus says, "A whoreson tisick, a whoreson rascally tisick so troubles me . . . that I shall leave you one of these days" (Troilus and Cressida, V, iii).

Thomas Elyot, in the "Castelle of Helthe" (1534), uses "tisick" as synonymous with "shortnesse of breth." Onions defines it here as "a consumptive cough" and Schmidt as asthma or possibly "hectic." In the southern Appalachians, the laity still speak of asthma as "phthisic." Careful study of the context convinces me that Shakespeare actually meant asthma and that he probably believed it to be syphilitic in origin, for Pandarus goes on to say, "I have . . . such an ache in my bones that . . . I cannot tell what to think on't" (Troilus and Cressida, V, iii).

Cough is mentioned seven times, but in only two instances is it clear as a part of the symptom complex. In one it is a manifestation of the common cold, the contagiousness of which is also implied. When Falstaff is examining his recruits in Gloucestershire, this dialogue takes place:

> BULLCALF: I am a diseased man
> FALSTAFF: What disease hast thou?
> BULLCALF: A whoreson cold, sir, a cough, sir, which I caught . . . upon . . . coronation day.
>
> *2 Henry IV*, III, ii.

In the second instance, cough is represented as a part of the aging process. Ulysses, in "Troilus and Cressida" (I, iii), lists "to cough and spit" among "the faint defects of age."

Consumption is mentioned five times, and severity and wasting are always implied. Falstaff likens his pecuniary condition to consumption thus, "I can get no remedy against this consumption of the purse; borrowing only lingers and lingers it out, but the disease is incurable" (2 Henry IV, I, ii).

Once the word is used as synonymous with "plague" and as part of a curse: "Consumption catch thee!" (Timon of Athens, IV, iii). Here, spoken by Timon, the word may refer to syphilis, for earlier in the same scene he uses the plural "consumptions," unquestionably descriptive of late syphilis; and, incidentally, here is the first reference to the sunken nose of syphilis, as far as I can determine, in medical or any other type of literature. Lear, in his maniacal raving, names consumption as one of the attributes of "hell . . . the sulphurous pit" (King Lear, IV, vi). Consumption, in the modern sense of pulmonary tuberculosis, is used

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tauntingly by Beatrice to her sweetheart, Benedick, when she agrees to accept his suit and become his bride: "I yield upon great persuasion, and partly to save your life, for I was told you were in a consumption" (Much Ado About Nothing, V, iv). It would appear here that Shakespeare believed pulmonary tuberculosis curable, an idea decidedly advanced for medicine of that day.

While the word "spit" is used often in the plays, in only two instances does it have a medical implication. We have already mentioned that the characteristics of aging, as listed by Ulysses, include "to cough and spit," probably referring to the bronchiectatic aged. In the second instance, Falstaff says, "I would that I might never spit white again." The reference here is to the fact that physicians then regarded the color of the sputum as especially diagnostic of temperaments. Dark sputum was, according to Batman, "of melancholy," and "the white spettle not knottie, signifieth health." Some believed that white spittle was due to thirst, and Nares held that "to spit white" was a result of alcoholic intemperance. Falstaff's known inebriety, considered with the context, would lead us to the conclusion that Falstaff, at least, concurred in this opinion. "Hawking and spitting" is used in one instance, but as a manifestation of emotional embarrassment rather than with disease significance.

"Rheum" is used 15 times in the plays, most often in the sense of tears. When Shylock says to the would-be borrower Antonio, "you . . . spet upon my Jewish gaberdine" and "did void your rheum upon my beard," the word evidently means saliva. Once it is used in the sense of a nasal discharge, but in no instance does the poet use rheum in the modern medical sense of sputum.

"Plurisy" is used once, or, if we accept the opinion of Dyce, Lamb and Coleridge that Shakespeare actually was co-author with Fletcher of the "Two Noble Kinsmen," twice. In each instance the word is used in the sense of "plethora" rather than of an inflammation of the pleural membrane. In fact, "plurisy" was most commonly used in the former sense three centuries ago. More likely the condition we now know as pleurisy is meant when Prospero says:

> Tonight thou shalt have cramps,
> Side-stitches that shall pen thy breath up.
>
> *Tempest*, I, ii.

"Catching cold" in the sense of contracting an acute respiratory infection, or what we now call the common cold, is referred to 10 times. The idea, still prevalent among the laity, that to lie down without covering may usher in an acute cold, is seen in: "Yet here they shall not lie, for catching cold" (Two Gentlemen of Verona, I, ii).

We have already noted the idea of contagiousness of colds in the dialogue between Falstaff and the recruit, and weather as a causative factor is implied when the diminutive Grumio says, "Considering the weather, a taller man than I will take cold" (Taming of the Shrew, IV, i). Later in the same scene, after exposure to cold, he says, "I have caught extreme cold." Even the fool in "King Lear" implies that the weather is a causative agent when he says, "As the wind sits, thou'lt catch cold shortly" (King Lear, I, iv). The possible severity of the common cold is alluded to when Hotspur says, "'Tis dangerous to take a cold" (1 Henry IV, ii). Knowledge of the sensation of nasal constriction and stuffiness and the disturbance of the sense of smell, as symptomatic of a head cold, is displayed when Hero calls attention to the "excellent perfume" of the gloves given her by the count:

> BEATRICE: I am stuffed, cousin; I cannot smell.
> MARGARET: . . . There's goodly catching of cold.
>
> *Much Ado About Nothing*, III, iv.

The high diaphragm in the corpulent person is alluded to when Prince Hal says to Falstaff, "This bosom of thine . . . is all filled up with guts and midriff" (1 Henry IV, III, iii). The term midriff was commonly used by the profession in middle and early modern English instead of diaphragm.

The grave illness of the King of France, whose recovery had been despaired of, was described by Shakespeare in "All's Well That Ends Well" as a fistula, a term then implying a discharging sinus anywhere in the body. From Boccaccio, the source of the plot, we know, however, that the actual condition was a draining chest sinus, a sequela of an empyema necessitatis. The King's condition had resisted all treatment given by the medical profession when Helena, the daughter of Gerard de Narbon, a "physician . . . much fam'd," offered to effect a cure by means of a secret prescription originated by her father. In those days surgeons were accustomed to keep their remedies secret, but physicians preferred to share their knowledge with their confrères. The King shows his knowledge of the medical ethics of his time and of the attitude of the profession in his reply to the girl's proffer of treatment:

> We thank you, maiden:
> But may not be so credulous of cure,
> When our most learned doctors leave us; and
> The congregated college have concluded
> That laboring art can never ransom nature
> From her inaidable estate; I say we must not
> So stain our judgment, or corrupt our hope,
> To prostitute our past-cure malady
> To empirics, or to dissever so,
> Our great self and our credit, to esteem
> A senseless help which help past sense, we deem.
>
> *All's Well That Ends Well*, II, i.

But Helena will not be refused. She argues and promises that if he is not cured within eight days she will forfeit her life "with vilest torture." Finally the King consents, saying:

> "Sweet practiser, thy physic I will try,
> That ministers thine own death if I die."
>
> *All's Well That Ends Well*, II, i.

Helena's prescription most miraculously cures him in two days, to the amazement of "the learned and authentic fellows," followers of both "Galen and Paracelsus . . . that gave him out incurable" and "not to be helped."

While tuberculosis of the cervical lymph nodes, or scrofula, is not, strictly speaking, a chest disease, it is of interest to chest specialists because its etiology makes it a part of the over-all problem of tuberculosis. Shakespeare knew the condition as "king's evil," so named because of the belief that its victims were cured after having had their lesions touched by the reigning sovereign. The disease is alluded to in only one play, "Macbeth," and this scene was probably introduced as a compliment to James I, who had recently come to the throne and had revived the custom of "touching," believing himself hereditarily endowed with the alleged miraculous powers of Edward the Confessor, the first to claim the "curative touch." James is said to have

been especially proud of exercising the "touching power." Wilkes quotes Sir William Davenant (certainly the godson of Shakespeare and reputedly his illegitimate son) as saying that "in recognition of this fulsome compliment [in "Macbeth"], King James sent Shakespeare a letter of acknowledgment in his own handwriting."

While Malcolm and MacDuff are discussing the woes of Scotland and the misgovernment and crimes of Macbeth, a physician enters. Malcolm questions the man of medicine:

Comes the king forth, I pray you?
DOCTOR: Ay, sir; there are a crew of wretched souls
That stay his cure. Their malady convinces
The great assay of art; but at his touch,
Such sanctity hath heaven given his hand,
They presently amend.
MALCOLM: I thank you, doctor.
MACDUFF: What's the disease he means?
MALCOLM: 'Tis called the evil;
A most miraculous work in this good king,
Which often, since my here-remain in England,
I have seen him do. How he solicits heaven,
Himself best knows; but strangely-visited people,
All swollen and ulcerous, pitiful to the eye,
The mere despair of surgery, he cures,
Hanging a golden stamp about their necks,
Put on with holy prayers; and 'tis spoken,
To the succeeding royalty he leaves
The healing benediction. With this strange virtue,
He hath a heavenly gift of prophecy,
And sundry blessings hang about his throne,
That speak him full of grace.

Macbeth, IV, iii.

The solicitation of heaven was evoked by the monarch in the "touching" ceremony, which was very solemn and impressive. The church dignitaries stood by. The king touched the diseased glands of the patient and solemnly intoned, "Rex tangit te; Deus sanat te, in nomine Patris et filii et spiritus sancti." The golden stamp alluded to by Shakespeare was here an anachronism, for the early kings gave only a penny as a neck-piece, but Henry VII in 1505 introduced the practice of giving a golden coin, called an angel, the value of which was 6s. 8d., or about a dollar at our present rate of exchange, although the purchasing power of money then was probably at least 25 times that of the present. It is a matter worthy of note that the angel was a coin in common circulation in the Elizabethan era and was the physician's usual fee for a consultation.

The superstition of the "royal touch" was well grounded in England. Pope Alexander III canonized Edward the Confessor and recognized his miraculous gift of healing. For years the "touching" service was a part of the Book of Common Prayer, but it was expunged in 1719.

I have discussed the medical references of interest to chest specialists as found in the work of Shakespeare and have endeavored to show that he understood medicine as it was known and practiced in his day and that in at least one instance, as to the curability of pulmonary tuberculosis, his thinking was well in advance of that of his physician contemporaries. He was not a physician in the strict sense of the term, but he knew and portrayed medicine in the way that he knew and portrayed all nature and all life—as its master. To quote Sir St. Clair Thomson, "His profound knowledge of human life and human nature . . . explains why he is, and must always be, one of our greatest masters of medicine."

REFLECTIONS ON THE CAUSATION OF DIABETES MELLITUS

The Frank Billings Lecture

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My interest in diabetes began with a residency at the Presbyterian Hospital of Chicago, to which I was appointed by Dr. Billings. The Sprague Memorial Institute had been founded not long before at Dr. Billings' instigation and was supporting the research of Dr. Woodyatt. My days were divided equally between the hospital and Dr. Woodyatt's laboratory. As I recall that period, there was no uncertainty then about the cause of diabetes. It had been shown by von Mering and Minkowski [1] that ablation of sufficient pancreatic tissue would provoke diabetes in the dog. It was known from the work of Allen [2] and of Homans [3] that degeneration of the islets in the pancreatic remnant of partially depancreatized dogs was followed by development of diabetes, and it had been observed by Opie [4] that the islets of the pancreas of diabetic patients were frequently abnormal when examined after death. Diabetes mellitus was pancreatic diabetes in those days. In contrast, the subject of the origin of the disease now is enveloped in confusion. In the minds of some authorities, the pancreas has been deposed from its prime position in causation, and diabetes, formerly considered a clinical entity, has been degraded to a syndrome with multiple causes. The pioneer discoveries of Houssay and his colleagues,[5] followed by the work of many others, is responsible for this new point of view, although few of those responsible may share it. Their experiments have revealed that pancreatic diabetes is alleviated by removal of certain organs, notably the pituitary body, the adrenal cortices and the thyroid gland, and furthermore that conditions resembling diabetes are producible experimentally by injection of hormonal products of these organs.

It now has been established that regulation of the blood sugar level is a complex process in which several of the endocrine glands, together with the central nervous system, are engaged. In a mechanical analogy of blood sugar regulation Soskin and Levine [6] (fig. 1) place the liver in the center of the stage, the liver being acted on in one direction (producing hyperglycemia) by the anterior lobe of the pituitary body, the adrenal cortex and the thyroid and in the opposite direction (producing hypoglycemia) by the pancreas. In another diagrammatic representation of the balance between hypoglycemic and hyperglycemic factors McQuarrie and co-workers [7] (fig. 2) picture a beam and scales.

From the Division of Medicine, Mayo Clinic.
Read before the Section on Internal Medicine at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 28, 1950.

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2. Allen, F. M.: Studies Concerning Glycosuria and Diabetes, Boston, W. M. Leonard, 1913.
3. Homans, J.: Degeneration of the Islands of Langerhans Associated with Experimental Diabetes in the Cat, J. M. Research **30**:49-67 (March) 1914.
4. Opie, E. L.: Disease of the Pancreas: Its Cause and Nature, ed. 2., Philadelphia, J. B. Lippincott Company, 1910.
5. Houssay, B. A.; Smyth, F. S.; Foglia, V. G., and Houssay, A. B.: Comparative Diabetogenic Action of the Hypophysis from Various Animals, J. Exper. Med. **75**: 93-106 (Jan. 1) 1942.
6. Soskin, S., and Levine, R.: Carbohydrate Metabolism: Correlation of Physiological, Biochemical and Clinical Aspects, Chicago, University of Chicago Press, 1946.
7. McQuarrie, I.; Bauer, E. G.; Ziegler, M. R., and Wright, W. S.: The Metabolic and Clinical Effects of Pituitary Adrenocorticotropic Hormone (ACTH) in Spontaneous Hypoglycemosis, Bull. Univ. Minnesota Hosp. **21**: 35-45 (Oct. 14) 1949.

Pancreatic beta cells produce insulin and weight the beam in one direction to cause hypoglycemia. The pituitary body, the adrenal glands, the thyroid, the liver and the diet weight the beam in the opposite direction, possibly assisted by the ovary and a hyperglycemic hormone originating in the pancreatic alpha cells. Stimulation of several of these opposing forces is by the parasympathetic or the sympathetic nerves, which may place the ultimate control of the process with the central nervous system.

As well established as is this multiple control of blood sugar regulation is the fact that preexisting diabetes is profoundly modified by the activity of these insulin opponents. In particular, overfunction of the hypophysis, the adrenal cortices and the thyroid gland leads to aggravation and their underfunction to amelioration of the diabetes.

However, it is not so well established that the hypophysis, the adrenals or any of the insulin antagonists are primarily responsible for diabetes in man, for human diabetes is something more than mere displacement of the level of blood sugar. Permanent derangement of the normal homeostasis is a basic characteristic. "Once a diabetic, always a diabetic" is a maxim to which exceptions are extremely rare, and permanence, as I shall show, is rarely a characteristic of so-called pituitary or adrenocortical diabetes, or of any form of hyperglycemia, except that with which the pancreas is involved.

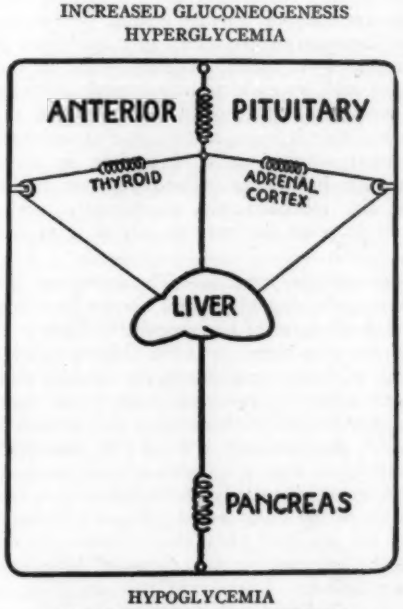

Fig. 1.—Mechanical analogy of carbohydrate metabolism (from Soskin and Levine [9]).

FORMS OF HYPERGLYCEMIA

I shall briefly review the types of hyperglycemia of diverse nonpancreatic origin to observe wherein they differ from the hyperglycemia of human diabetes. One must bear in mind while doing this that both in transient hyperglycemia of whatever origin and in what I am calling the permanent hyperglycemia of human diabetes one is not concerned with the blood sugar level at any particular moment. What is of interest is the permanence of the displacement of the balance. In any type of hyperglycemia the concentration of blood sugar at any moment may be lowered by altering the diet or by administering insulin.

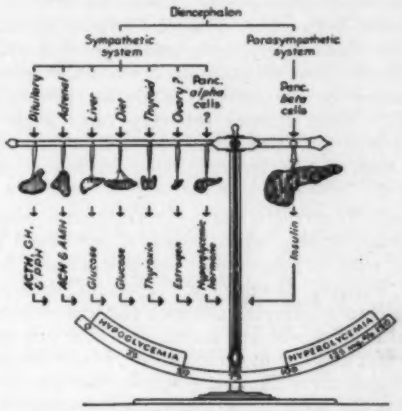

Fig. 2.—Schematic representation of balance between hypoglycemic and hyperglycemic factors affecting carbohydrate metabolism (from McQuarrie, Bauer, Ziegler and Wright [7]). The initials ACTH, GH, PPH, ACH and AMH denote pituitary adrenocorticotropic, gonadotropic, posterior pituitary, adrenocortical and adrenal medullary hormone (epinephrine), respectively.

Toxic Hyperglycemia.—Hyperglycemia with or without glycosuria is met with on occasion in almost all infections, especially at the height of fever. It also may be seen in some intoxications. The transitory nature of such hyperglycemia is a matter of common knowledge. It seldom is confused with diabetes. However, there are two exceptions: the pancreatitis which accompanies mumps can lead to permanent diabetes; so also may the poisoning of an animal with alloxan. However, in both these instances the diabetes is pancreatic diabetes, being dependent on a degree of injury of the insulogenic beta cells of the pancreatic islets.

Neurogenic Hyperglycemia.—At times after the brain has been injured by accident, tumor or operation high values for blood sugar are encountered and glycosuria may be intense. Such hyperglycemia depends on the presence of preformed glycogen in storage in the liver, although at times an alarm reaction is involved with participation of the pituitary-adrenal axis. In any case, these types of hyperglycemia are transitory and seldom are diagnosed as diabetes. It was not so always. Bernard,[8] one hundred years ago, believed that he had produced true diabetes mellitus by his puncture of the floor of the fourth ventricle, and so weighty was his influence that from then until the production of pancreatic diabetes by von Mering and Minkowski [1] many clinical observations of the relationship of diabetes to lesions of the pancreas were disregarded.[9] The mechanism of the effect of the Bernard procedure is still a puzzle. The nerve impulse initiated by his puncture follows the sympathetic nerves and not the vagus nerves, as he himself was the first to demonstrate. Participation of the adrenal medulla was suspected at one time, but this is not essential, because ablation of

8. Bernard, C.: Influence de la section des pedunclés cérébelleux moyens sur la composition de l'urine, Compt. rend. Soc. de biol. **1**: 14 and 60, 1849.

9. Naunyn, B.: Der Diabetes mellitus, ed. 2., Wien, Alfred Hölder, 1906, p. 107.

both adrenal glands will not prevent the effect. The suggestion has been made that a sympathin is liberated elsewhere, perhaps even in the liver, thereby releasing the glycogen in storage in the liver. In any case, the effect can only be observed when preformed glycogen is on deposit in the liver, and no one today regards such neurogenic diabetes as diabetes mellitus.

Injected epinephrine provokes hyperglycemia when the liver contains glycogen, and hyperglycemia sometimes results from spontaneous liberation of epinephrine by tumors of the adrenal medulla (pheochromocytomas). These tumors are very rare; sugar is not always seen with them, and, when it occurs, it disappears with almost no exceptions when the tumor is removed.

Hunger Hyperglycemia.—Hyperglycemia with glycosuria may develop when fasted or semifasted persons are fed with carbohydrate. The phenomenon has been called "hunger," "famine" or "vagabond" diabetes. The response to a glucose tolerance test encountered in a normal subject who has fasted, or whose diet has been high in fat and low in carbohydrate, is a prolonged high blood sugar curve like that which in other circumstances suggests the presence of pancreatic diabetes. In point of fact, this is a form of pancreatic diabetes. It is correctable, however, simply by continuing to feed a diet which is normal with respect to carbohydrate and so is incorrectly diagnosed as diabetes. I observed the same phenomenon when a nondiabetic person was given insulin for a period of days.[10] The most reasonable explanation of the phenomenon is that the cells of the pancreatic islets which manufacture insulin, the so-called beta cells, are lulled into somnolent inactivity either by fasting or by giving insulin and thus, like the "five foolish virgins," find themselves with empty lamps when called. This explanation is supported by histologic studies which reveal fewer negative Golgi images than normal and a paucity of granulations in the beta cells of fasted animals.[11] Furthermore, the amount of insulin recoverable from the pancreas of animals fed little carbohydrate or given insulin has been found to be low.[12]

Thiamine Deficiency.—Hyperglycemia and glycosuria are encountered in beriberi and in experimental thiamine deficiency in man. The fault here is with the utilization of the intermediates having 3 carbon atoms, lactate and pyruvate. This probably effects a degree of retardation of the rate at which dextrose is removed from the blood. The abnormality is correctable with thiamine, which may explain in part the improvement of presumed diabetes occurring in some patients with dysfunction of the liver who are receiving treatment for their hepatic abnormality with vitamins, including thiamine.

Hepatic Hyperglycemia.—Reports [13] that many diabetic patients give evidence of dysfunction of the liver must relate to a different kind of diabetes than is encountered in the Mayo Clinic,[14] where, when patients with cholecystitis and other inflammatory conditions also involving the pancreas are excluded, dysfunction of the liver is uncommon. Likewise, Harold Brown,[15] in a recent study of 25 diabetic persons by means of a battery of liver function tests, obtained no evidence of impaired hepatic function. Fifteen of the patients had been through an episode of acidosis. Furthermore, neither cirrhosis nor hepatitis, when present, has influenced unfavorably the severity of the diabetes. The reverse is to be expected. Hepatic damage, if extensive, provokes a low concentration of blood sugar. Sometimes patients with hepatitis or cirrhosis will have sugar in their urine after meals although their levels of blood sugar before the first meal of the day are normal, low or occasionally very low. There is no evidence to show that utilization of glucose is abnormal in these cases; the fault is with the glycogen warehouse. It is generally agreed that such conditions are incorrectly diagnosed as diabetes mellitus. The diabetes which accompanies hemochromatosis is an exception. The pancreatic islets are injured as much as is the liver in hemochromatosis.

Without the liver sugar cannot be made from protein or other glucose formers. In the absence of the liver the supply of sugar is cut off; therefore, in the fasting animal a degree of hepatic function is a necessary condition for the development of glycosuria. In pancreatic diabetes glycogen formation is disturbed and the rate of gluconeogenesis is increased, but these abnormalities result from insufficiency of insulin and are at once correctable by giving insulin. Glycogenolysis, that is, liberation of preformed glycogen from the liver with resulting transient hyperglycemia, is provoked, as I have said, by toxic and neurogenic irritants of the liver; also, as I shall point out, the rate of gluconeogenesis may increase in response to overfunction of the pituitary-adrenal axis. However, in my opinion this provides insufficient grounds for assuming that the liver is able independently, permanently and continuously to increase the rate at which it manufactures sugar.

Pituitary Hyperglycemia.—The statement frequently has been made that glycosuria occurs in a large proportion of all cases of acromegaly.[16] This is not confirmed by experience at the Mayo Clinic. The incidence of diabetes mellitus in the cases of acromegaly has been relatively low, less than 9 per cent,[14] and the diabetes in half of these cases clearly antedated the disease of the pituitary body. The diabetes usually was mild when the two diseases were associated, but, mild or severe, it usually disappeared, as in examples cited recently by Balfour and Sprague,[17] when the disease of the pituitary body either burned itself out, as frequently happens, or was corrected by operation or other treatment. I interpret this small incidence of acromegalic diabetes and its transitory nature when it does occur as meaning that the pituitary growth hormone—effective as this may be experimentally in provoking diabetes in certain animals [18]—is produced in

10. Wilder, R. M.; Smith, F. H., and Sandiford, I.: Observations on Obesity, Ann. Int. Med. **6**:724-742 (Dec.) 1932.
11. Best, C. H.; Haist, R. E., and Ridout, J. H.: Diet and Insulin Content of Pancreas, J. Physiol. **97**:107-119 (Nov. 14) 1939.
12. Best, C. H., and Haist, R. E.: Effect of Insulin Administration on Insulin Content of Pancreas, J. Physiol. **100**: 142-146 (Sept. 8) 1941.
13. (*a*) Levy, C. M.; Ryan, C. M., and Fineburg, J. C.: Diabetes Mellitus and Liver Dysfunction, Am. J. Med. **8**:290-299 (March) 1950. (*b*) Lazarow, A.: Factors Controlling the Development and Progression of Diabetes, Physiol. Rev. **29**:48-74 (Jan.) 1949.
14. Wilder, R. M.: Clinical Diabetes Mellitus and Hyperinsulism, Philadelphia, W. B. Saunders Company, 1940.
15. Brown, H.: Liver Function in Diabetes Mellitus, Am. J. M. Sc. **218**: 540-542 (Nov.) 1949.
16. Borchardt, L.: Die Hypophysenglykosurie und ihre Beziehung zum Diabetes bei der Akromegalie, Ztschr. f. klin. Med. **66**:332-348, 1908.
17. Balfour, W. M., and Sprague, R. G.: Association of Diabetes Mellitus and Disorders of the Anterior Pituitary, Thyroid and Adrenal Cortex, Am. J. Med. **7**: 596-608 (Nov.) 1949.
18. (*a*) Cotes, P. M.; Reid, E., and Young, F. G.: Diabetogenic Action of Pure Anterior Pituitary Growth Hormone, Nature **164**: 209-211 (Aug. 6) 1949. (*b*) Young, F. G.: Experimental Observations on the Cause of Diabetes, Proc. Roy. Soc. Med. **42**: 321-323 (May) 1949.

amounts which are insufficient even in acromegaly to provoke true diabetes mellitus in the otherwise normal man.

At least two so-called diabetogenic products have been obtained from beef pituitary body. Recently a third product, prolactin, has been found to have similar activity.[19] The first of the two diabetogenic products obtained appears to be identical with the growth hormone previously considered. The second is pituitary adrenocorticotropic hormone (ACTH). When the adrenocorticotropic hormone is administered in large amounts to rats it provokes the adrenal cortices to hyperplasia and overfunction with resulting hyperglycemia and glycosuria.[20] Also, when administered to man in sufficient quantities and for a sufficient length of time, this hormone has elicited a "temporary diabetes."[21] The effect in man, however, appears to be inconstant; during the past eighteen months or so pituitary adrenocorticotropic hormone or the adrenocortical hormones themselves have been used in the treatment of a considerable number of patients with several diseases, but relatively little evidence of production of a diabetic type of abnormality has been encountered. The values for the fasting blood sugar of these patients almost always have been normal. In 1 case hyperglycemia with glycosuria developed but disappeared while injections of pituitary adrenocorticotropic hormone were continued. The experience related is based on doses which, although small when compared with those inducing diabetes in the rats, were large enough, 100 mg. a day, to elicit in one patient or another one or more of nearly all the other signs and symptoms of Cushing's syndrome.[22] From these observations I am led to the conclusion that the pituitary body, either through its growth hormone or through adrenocorticotropin, plays an exceedingly minor part in the pathogenesis of human diabetes. In saying this I am not unmindful of reported observations on the size of some infants of diabetic women and on the stature of some diabetic children at the time of onset of their diabetes. Such observations seem to me to be irrelevant, because, if the pituitary bodies are overactive in these women or these children, other evidence of such activity should be available, but it is not. Furthermore, overfunction of the pituitary body is conceivable only when the function of its target organs (thyroid, adrenal cortices and so forth) is suppressed. These are self-limiting systems, and overfunction of the target organs puts a brake on pituitary function much as extension of the arms of the governor of a steam engine, when the extension reaches a certain limit, shuts off the steam. The simile was suggested to me by Dr. F. D. W. Lukens.

Adrenocortical Hyperglycemia.—The adrenocortical hormones, compound E (17-hydroxy-11-dehydrocorticosterone), now known as cortisone, and its chemical relation, compound F (17-hydroxycorticosterone), will themselves produce a form of diabetes when administered to animals or men. This diabetes, like that which follows injection of pituitary adrenocorticotropic hormone and that observed in patients with Cushing's syndrome, differs in the following important respects from diabetes mellitus: 1. It is highly resistant to insulin. 2. It is accompanied with azoturia (excretion of nitrogen in excess of intake), which continues even when there is no acidosis or at times when, because of dieting, the sugar in the urine is minimal or absent. This behavior is in sharp contrast with that of pancreatic diabetes. 3. In sharp contrast also is an increase in the glycogen in the liver.[23] 4. Corticoid diabetes responds to fasting much more promptly than does diabetes mellitus. A day of fasting will clear the urine of sugar in cases in which the glycosuria has resisted control with as much as 100 units of insulin or more. 5. With rare exceptions, corticoid diabetes is accompanied with some other evidence of adrenocortical hyperfunction, that is, symptoms or signs of Cushing's syndrome or the presence in the urine of greater than normal amounts of corticosteroids. My colleagues, Mason and Sprague, reported the isolation of 191 mg. of crystalline compound F from a 25-day collection of urine of one patient with hyperplasia of his adrenal cortices.[24] This contrasts sharply with the relatively normal excretion of these substances in diabetes mellitus. 6. The hyperglycemia is transitory in the sense that the blood sugar levels return to normal when the adrenocortical hyperfunction is corrected.

Thyrogenic Hyperglycemia.—A small proportion of patients with hyperthyroidism who previously have not been diabetic excrete sugar in small amounts and respond to glucose tolerance tests with high blood sugar curves. In part, this is explained by an increase in the rate of absorption of glucose from the bowel, a characteristic of hyperthyroidism, but this alone is not responsible, for dextrose given by vein at timed rates is utilized by hyperthyroid patients less rapidly than by normal persons.[25] The fault appears to lie in the rate of glycogen formation. In any case, unless a degree of diabetes existed before the onset of the hyperthyroidism, the disturbance is corrected when the thyroid status is restored to normal; hence, this form of hyperglycemia is not to be confused with that of diabetes mellitus.

META DIABETES

The term "meta diabetes" was introduced by Houssay[26] to describe a permanent diabetes which is produced in animals by stresses sufficient in intensity and duration to cause permanent damage to the pancreatic beta cells. Thus metahypophysial diabetes was provoked by Young[27] in adult dogs first with crude pituitary extracts,[27] later with purified growth hormone.[18b] When such extracts are injected into suitable animals, the early changes in the pancreas are identical with those obtained when dogs from which the pancreas

19. Houssay, B. A., and Anderson, E.: Diabetogenic Action of Purified Anterior Pituitary Hormones, Endocrinology **45**: 627-629 (Dec.) 1949.
20. Ingle, D. J.; Li, C. H., and Evans, H. M.: The Effect of Adrenocorticotropic Hormone on the Urinary Excretion of Sodium, Chloride, Potassium, Nitrogen and Glucose in Normal Rats, Endocrinology **39**: 32-42 (July) 1946.
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22. Sprague, R. G.; Power, M. H.; Mason, H. L.; Albert, A.; Mathieson, D. R.; Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Observations on the Physiologic Effects of Cortisone and ACTH in Man, Arch. Int. Med. **85**: 199-258 (Feb.) 1950.
23. Miller, A. M.: Liver Glycogen Responses to Adrenal Cortical Extract of Diabetic and Non-Diabetic Rats, Proc. Soc. Exper. Biol. & Med. **72**: 635-636 (Dec.) 1949.
24. Mason, H. L., and Sprague, R. G.: Isolation of 17-Hydroxycorticosterone from the Urine in a Case of Cushing's Syndrome Associated with Severe Diabetes Mellitus, J. Biol. Chem. **175**: 451-456 (Aug.) 1948.
25. Wilder, R. M., and Sansum, W. D.: *d*-Glucose Tolerance in Health and Disease, Arch. Int. Med. **19**: 311-334 (Feb.) 1917.
26. Houssay, B. A.: Experimental Diabetes, Clin. Proc. **5**: 219-230 (July) 1946.
27. Young, F. G.: Permanent Experimental Diabetes Produced by Pituitary (Anterior Lobe) Injections, Lancet **2**: 372-374 (Aug. 14) 1937. Young.[18b]

has been partially ablated are overfed [2] or when glucose is administered to cats.[28] The beta cells show signs of exhaustion manifested by progressive degranulation, which proceeds to hydropic degeneration; likewise, the insulin content of such a pancreas is diminished until it reaches a tenth or less of normal values.[29] When in such experiments the injections of pituitary extracts are discontinued before they have led to these extreme disturbances, the beta cells regenerate and the pancreas regains its normal insulin content.[30] Only when the damage to the beta cells has been sufficiently severe does regeneration fail. In that case, the diabetes which ensues, like all true pancreatic diabetes, is characterized by permanence.

Clinical examples of permanent hyperglycemia of this meta type (metahypophysial, metaadrenocortical or metathyroid diabetes, which are examples of permanent diabetes in man secondary to overstimulation from the pituitary body, the adrenal cortex or the thyroid) have as yet not come to my attention. They may occur, but before such a diagnosis is permissible evidence must be presented to show that the patient was not previously diabetic. In the large majority of all cases of acromegaly, Cushing's syndrome or hyperthyroidism little hyperglycemia develops even temporarily, and a normal carbohydrate tolerance returns when the endocrine abnormality has been corrected. This necessitates the conclusion that the normal pancreas possesses the reserve capacity required to meet the overload imposed by these diseases and that normal beta cells have sufficient endurance to escape lasting damage from such stresses.

Obesity and Diabetes.—A form of clinical diabetes to which the designation "meta" applies quite forcibly is that which develops in obesity, representing, I should guess, about 80 per cent of the diabetes observed in adult patients. If it is true that insulin is used to turn glucose into fat, as recent evidence has suggested, the mere existence of obesity may be regarded as an index of pancreatic overload. In any case, the large amount of food which the fat man must consume to attain and maintain his excessive body weight imposes a metabolic stress which creates increased demand for insulin. This stress or overloading may not be severe but it always is of long duration, years on years; hence, in time the beta cells if they originally and presumably genetically are under par can be expected to degenerate, causing lasting diabetes. In the early stages of this type of diabetes, as is true of experimental pituitary hyperglycemia, damage to the pancreas is reversible; when some patients are reduced in weight to an appropriate degree of slimness their diabetes sometimes disappears to the point that the response to a sugar tolerance test is like that of normal persons. However, if such patients regain their former weight their diabetes returns; indeed, it not infrequently returns even if they do not gain any weight. However, diabetes develops in only a rather small minority of the total number of obese persons. Therefore it is safe to say that in cases in which it does develop, the patients started life with something less than normal insular endurance.

28. Dohan, F. C., and Lukens, F. D. W.: Experimental Diabetes Produced by Administration of Glucose, Endocrinology **42**: 244-262 (April) 1948.

29. Best, C. H.; Campbell, J., and Haist, R. E.: The Effect of Anterior Pituitary Extracts on the Insulin Content of the Pancreas, J. Physiol. **97**: 200-206 (Dec.) 1939.

30. Ham, A. W., and Haist, R. E.: Histological Study of Trophic Effects of Diabetogenic Anterior Pituitary Extracts and Their Relation to Pathogenesis of Diabetes, Am. J. Path. **17**: 787-812 (Nov.) 1941.

COMMENT AND CONCLUSIONS

This review of hyperglycemia of diverse origin has revealed that only when an abnormality of carbohydrate metabolism is characterized by permanence does it resemble human diabetes, which when once acquired is not lost; the maxim "once a diabetic, always a diabetic" holds true almost without exceptions. However, permanence which is a characteristic of human diabetes is observed only in those forms of experimental hyperglycemia which involve destruction of the pancreatic beta cells. These cells in man are sometimes injured by infection of the pancreas, by malignant disease of the pancreas or by hemochromatosis. Alloxan, which chemically is an oxidation product of uric acid, produces necrosis of the beta cells, and uric acid has been said to do the same in animals.[31] This gives rise to speculation about a possible relationship between gout and diabetes. However, association of gout with diabetes is exceedingly rare as is also the association of hyperuricemia without gout.

The beta cells of intact animals may be permanently injured by creating a demand for their incretion of such intensity that it leads to their exhaustion. Demands of this degree have been provoked experimentally by giving glucose intraperitoneally to cats [28] and by long-continued injection of pituitary extracts into adult dogs. In these instances the permanent diabetes which results, so-called meta diabetes, depends on destruction of the beta cells. Thus fundamentally the diabetic state in such meta diabetes is pancreatic diabetes—"in effect a removal of the beta cells instead of a removal of the pancreas as a whole." [32]

There is, however, little evidence to support the view that stress imposed by the hypophysis, the adrenal glands or the thyroid accounts for the original development of the clinical entity, diabetes mellitus. The normal healthy pancreas possesses an endurance which appears to be adequate to resist the stresses created by all degrees of endocrine overfunction encountered clinically. Temporary failure occurs in many instances, with resulting hyperglycemia. However, from the fact that the diabetic state so provoked disappears when the hyperfunction of the insulin opponents is corrected, the inference is clear that the overfunction of the pancreatic beta cells has not led to their destruction, and that true diabetes mellitus has not been produced. Exceptions may occur; so far, they have not come to my attention.

Overweight, or the excessive consumption of food which leads to it, imposes a demand for insulin which not only exceeds normal but is of long duration, extending usually over many years. It thus may lead to damage of the beta cells. However, diabetes develops in only a small proportion of persons who are grossly overweight. Therefore, in those cases in which diabetes is provoked by overweight one can logically assume that the pancreas had less endurance than normal from the outset.

Furthermore, in many instances of diabetes, including almost all cases in which diabetes develops in childhood, one finds no grounds for assuming the existence of abnormal stress of any kind. The causation of diabetes in these cases must therefore rest exclu-

31. Griffiths, M.: Uric Acid Diabetes, J. Biol. Chem. **172**: 853-854 (Feb.) 1948.

32. Haist, R. E.: Studies in Experimental Diabetes, Am. J. Med. **7**: 585-595 (Nov.) 1949.

sively on a degree of inferiority, anatomic or functional, of the pancreatic beta cells, such that the normal stresses of life imposed by growth, puberty and pregnancy are sufficient to provoke irreversible derangements. Thus, contrary to opinions which have been expressed by Lazarow,[33b] Himsworth,[33] Young,[18b] Bartelheimer [34] and others, one returns to the theory of a unitary origin of diabetes.

Unanswered thus far are those who oppose the theory of a unitary origin of diabetes on the ground that the pancreatic islets in many diabetic persons examined after death show no abnormality. Terbrüggen's [35] recent histologic studies with newer staining methods led him to the conclusion that the pancreatic islets in 80 per cent of cases of human diabetes are small and contain relatively few beta cells but a disproportionate number of alpha cells. Bell,[36] who also used newer staining methods, found an absence or a decided reduction in the number of beta granules in 63 per cent of cases. This leaves 20 to 37 per cent of cases in which there is no anatomic explanation for human diabetes. However, anatomic alterations need not necessarily accompany functional incapacity, and histochemical procedures later may reveal abnormalities not now discernible. In any case, failure consistently to find anatomic abnormality in the pancreas of human beings with diabetes lends no support to the contention that the pituitary body, the adrenal gland or the thyroid play roles of much significance in the basic pathogenesis of human diabetes, for the beta cells in every instance of permanent diabetes produced experimentally by injection of the hormones of these endocrine glands have revealed clear anatomic evidence of damage to the islets.

In any case, the several insulin opponents, endocrine and nervous, including excessive ingestion of food with resulting obesity, important as they are to the regulation of the level of blood sugar, and great as is their influence on the intensity of preexistent diabetes, give rise to diabetes characterized by permanence only when they cause irreversible and in the case of experimental diabetes easily demonstrable lesions of the pancreatic beta cells. This occurs infrequently, if at all, in man, unless the beta cells possess originally and presumably genetically something less than normal endurance. Therefore, in my judgment, diabetes mellitus ought still to be regarded as a clinical entity of pancreatic origin.

33. Himsworth, H. P.: The Syndrome of Diabetes Mellitus and Its Causes, Lancet **1**: 465-473 (March 19) 1949.
34. Bartelheimer, H.: Die Regulation des Kohlehydratstoffwechsels beim insulären und extrainsulären Diabetes, Deutsche Ztschr. f. Verdauungskr. **9**: 238-246; 272-284, 1949.
35. Terbrüggen, A.: Untersuchungen über Inselapparat und Inseladenome des Pankreas, insbesondere Über die Zelltypen bei Diabetes mellitus und Spontanhypoglykämie, Virschows Arch. f. path. Anat. **315**: 407-460 (May 18) 1948.
36. Bell, E. T.: The Pathological Anatomy of Diabetes Mellitus, Illinois M. J. **92**: 215-218 (Oct.) 1947.

Misunderstandings To Be Avoided.—A physician, in his relationship with a patient who is under the care of another physician, should not give hints relative to the nature and treatment of the patient's disorder; nor should a physician do anything to diminish the trust reposed by the patient in his own physician. In embarrassing situations, or whenever there seems to be a possibility of misunderstanding with a colleague, a physician should seek a personal interview with his fellow.

From the PRINCIPLES OF MEDICAL ETHICS of the American Medical Association.

REITER'S SYNDROME: EFFECT OF PITUITARY ADRENOCORTICOTROPIC HORMONE (ACTH) AND CORTISONE

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In 1916 a case report by Reiter [1] drew attention to a symptom complex of arthritis, urethritis, conjunctivitis and diarrhea. Since this original report many others have appeared in the literature describing a syndrome with variable clinical features and under a variety of titles but most commonly "Reiter's syndrome." In general, emphasis has been placed on the triad of urethritis, conjunctivitis and arthritis; diarrhea has frequently been absent. Although some are of the opinion that one or even two components of the triad may not be present in a particular case, others have reported additional features which occur less frequently. These have included balanitis with superficial circinate lesions on the glans penis, superficial ulcerations on the palate, buccal mucosa or tongue, a keratotic dermatitis of the soles and keratotic or pustular lesions affecting the nails of the toes and fingers. Considerable confusion exists regarding the actual boundary of Reiter's syndrome, and many of the case reports included in the earlier European literature have been rejected by Bauer and Engleman.[2]

All but one of the cases so far reported have occurred in young adult males. Usually the initial symptom is acute nonspecific urethritis, commonly following, but sometimes without, a history of sexual exposure. Diarrhea may accompany or precede the urethritis. Prostatitis and cystitis are not unusual. The conjunctivitis may be mild and unnoticed or may be absent. Generally within a period of two weeks an acute polyarthritis develops, the weight-bearing joints being most commonly affected, often in a symmetric manner. Fever and leukocytosis usually occur, and sometimes generalized lymphadenopathy and splenomegaly. The sedimentation rate is elevated. Skin and mucosal lesions are less common and usually appear only in the more severe cases. The joint changes are not unlike those seen in rheumatoid arthritis except that bony destruction and ankylosis are infrequent. As a rule the disease is self limited over a period of several weeks to months, but recurrences are not uncommon.

The causation of the disease remains unknown, although recent evidence suggests that it may be due to an infection with pleuropneumonia-like organisms. These have been recovered from the genitourinary tract [3]

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The cortisone acetate was made available by the Department of Veterans' Affairs, Ottawa, Ontario.
From the Medical Service, Sunnybrook (D. V. A.) Hospital, Toronto, and the Department of Medicine, University of Toronto.
The pituitary adrenocorticotropic hormone used in this study was supplied by the Armour Laboratories, Chicago, Dr. John R. Mote, medical director.
Dr. A. A. Fletcher initiated the study of plasma fibrinogen in relation to sedimentation rate. The biochemical investigations were carried out, in part, in the laboratories of the Department of Pathological Chemistry, University of Toronto, under the direction of Professors J. A. Dauphinee and A. G. Gornall. These studies will be considered in detail in a later report.
1. Reiter, H.: Spirochete Articular Disease, Deutsche med. Wchnschr. **42**: 1535, 1916.
2. Bauer, W., and Engleman, E. P.: A Syndrome of Unknown Etiology Characterized by Urethritis, Conjunctivitis and Arthritis (So-Called Reiter's Disease), Tr. A. Am. Physicians **57**: 307, 1942.
3. Dienes, L., and Edsall, G.: Observations on L-Organism of Kleineberger, Proc. Soc. Exper. Biol. & Med. **36**: 740, 1937. Dienes, L., and Smith, W. E.: Relationship of Pleuropneumonia-Like (L) Organisms to Infections of Human Genital Tract, ibid. **50**: 99, 1942. Dienes, L.; Berg, R. L., and Weinberger, H. J.: Further Observations on the Incidence and Significance of Pleuropneumonia-Like Organisms, Ann. Rheumat. Dis. **7**: 259, 1948.

and joint fluid,[4] but experimental inoculation has failed to reproduce the disease. A similar symptom complex of arthritis, diarrhea and urethritis or conjunctivitis, or both, has on occasion been observed to occur with dysentery,[5] and it has been suggested that the syndrome may be nothing more than dysenteric polyarthritis with added toxic manifestations.[6] Furthermore, it has been well known that cases of undoubted rheumatoid arthritis may sometimes be complicated by ocular lesions, urethritis or a brief diarrhea.[7]

This report deals not with controversy whether or not Reiter's syndrome constitutes a distinct clinical entity but with the effect of pituitary adrenocorticotropic hormone and cortisone on three patients with a symptom complex which conforms to the syndrome as described by most authors. Two patients received one course of pituitary adrenocorticotropic hormone and the third this drug followed by cortisone, both intramuscularly and orally. The patients received placebo injections both before and after the administration of the drugs and had no knowledge of the changes in medication. Daily observations were made on the clinical response. Laboratory studies included hematological and biochemical changes, erythrocyte sedimentation rates, serum protein fractionations, serum and urinary electrolytes, carbohydrate tolerance, urinary nitrogen excretions, urinary 17-ketosteroids, serial electrocardiograms and electroencephalograms, blood pressure, heart size and changes in body weight.

REPORT OF CASES

Case 1.—G. E. W., a man aged 29, was well until March 1943, when acute arthritis with pain, redness and swelling of the right wrist developed. Three months later the condition spread to the left ankle and both knees. The arthritis gradually subsided over six months, except for residual swelling and restricted movement of the right wrist. There was no history of urethritis or conjunctivitis, but the patient recalled having keratotic lesions on both soles. In subsequent years he had repeated exacerbations affecting one or more of several joints for periods of a few weeks to several months. During one of these episodes in 1945 he had an acute purulent urethritis which lasted for one week, but no neisserian organisms were demonstrated.

On Sept. 17, 1949 he suffered another attack of acute arthritis with severe systemic reaction, anorexia, fever and excessive perspiration. The right ankle and foot, and the left fourth and fifth toes were acutely painful, swollen and red. There was a history of sexual exposure two weeks before this exacerbation, followed in six days by a cloudy urethral discharge in smears of which gonococci were not found. The discharge did not clear, and the arthritis was not prevented by adequate penicillin therapy. With the onset of the joint swelling, painless, shallow, ulcerating lesions developed on the glans penis and in the mouth. There was no conjunctivitis. The man was admitted to Sunnybrook Hospital Sept. 27, 1949.

Examination revealed gross swelling, tenderness, redness and increased heat in the right ankle and foot, the interphalangeal joint of the right great toe and the proximal interphalangeal joints of the left fourth and fifth toes. There was an old deformity of the right wrist with decided restriction of movement. Roentgenograms of the wrist revealed pronounced destructive change with loss of joint space.

Many circinate areas of ulceration were present over the hard and soft palate, with similar lesions on the glans penis and prepuce and with a mild urethral discharge. There was no lymphadenopathy, but the spleen was palpable 3 cm. below the left costal margin. Blood and dark field examinations revealed normal conditions, and urethral smears did not show neisserian organisms.

The urethritis cleared in two weeks, but fever (to 101 F.) persisted for seven weeks. There was some improvement in the pain and swelling in the right ankle and toes, but three weeks after admission there developed an acute exacerbation in the left knee with severe pain, swelling and joint effusion. At the same time scattered hyperkeratotic reddish brown lesions varying from 2 to 5 mm. appeared over both soles. Keratotic lesions with suppuration also involved the nails of the toes and later of the fingers. Some of the toenails were subsequently shed. When the present observations began, the patient was confined to bed or occasionally used a wheelchair.

After placebo injections of saline solution had been given to the patient, pituitary adrenocorticotropic hormone was administered intramuscularly in doses of 25 mg. at six hour intervals throughout the twenty-four hours. Therapy was started Dec. 5, 1949 and was continued for 12 consecutive days.

Joint stiffness disappeared within 24 hours after administration of the drug and joint pain and tenderness after three days. There was a progressive decrease in the joint swelling, although a small amount of free fluid persisted in the left knee and the right ankle and left fourth toe remained a little swollen. The patient became fully ambulatory in three days and regained full range of movement in all joints in one week.

The oral lesions healed in three days and the penile lesions in 12 days. There was progressive healing of the keratodermia of the feet and about the nails, with considerable desquamation of the overlying skin. The sedimentation rate (Westergren), dropped from levels of 70 to 90 mm. per hour to 7 mm. per hour after 11 days. A distinct change in the mental attitude of the patient was manifested by mental exhilaration and mild euphoria.

Two days after withdrawal of the drug there was a mild recurrence of swelling and pain in the affected joints and reappearance of the lesions in the mouth, genitalia and soles. These were not severe and subsided gradually over the next four weeks. The sedimentation rate increased to 37 mm. in one hour but subsequently dropped to normal levels as the patient improved. He was discharged from the hospital on Feb. 6, 1950 and is now fully employed.

Case 2.—F. W., a married man aged 35, had an injury to his left knee in 1944 followed by stiffness, swelling and intermittent locking. In June 1944 the medial meniscus was removed, after which there was a rather slow recovery with residual stiffness persisting. On Oct. 1, 1949 there rapidly developed stiffness, pain and swelling of the right knee and local redness. One week later there occurred mild urethritis and soreness of the gums. Scattered, small, brownish lesions appeared on the soles. There were no eye symptoms.

The patient was admitted to Sunnybrook Hospital Oct. 16, 1949 with a temperature of 100 F. Over the posterior part of the palate and left buccal mucosa were small reddened areas of superficial ulceration, which extended to the inner gingival margin. The tongue was acutely inflamed. There was no lymphadenopathy or splenomegaly. The glans penis was reddened and excoriated with several areas of superficial ulceration, and there was a mild urethral discharge. The right knee was hot, red, swollen and acutely painful, with restriction of flexion and extension. The left knee was moderately swollen and tender with a small effusion but had a full range of movement. Over the soles there were a number of small, firm, brownish hyperkeratotic lesions. Smears and cultures of the urethral discharge were negative for gonococci or pleuropneumonia-like organisms. The sedimentation rate (Westergren) varied between 67 and 86 mm. per hour.

During his first two months in the hospital the patient showed some improvement, with clearing of the urethral discharge and gradual healing of the lesions on the soles. Some swelling and effusion persisted in the knees, although he was partially ambulatory. The oral and genital lesions improved but did not entirely heal. The sedimentation rate dropped to 15 mm. per hour. Pituitary adrenocorticotropic hormone was

4. Dienes, L., and others: Medical Progress: Role of Pleuropneumonia-Like Organisms in Genitourinary and Joint Diseases, New England J. Med. **238**: 509 and 563, 1948.
5. Young, R. H., and McEwen, E. G.: Bacillary Dysentery as Cause of Reiter's Syndrome (Arthritis with Nonspecific Urethritis and Conjunctivitis), J. A. M. A. **134**: 1456 (Aug. 23) 1947.
6. Beigbock, W.: Treatment of Reiter's Disease, Trop. Dis. Bull. **41**: 571, 1944.
7. Hench, P. S., and others: Rheumatism and Arthritis: A Review of American and English Literature of Recent Years (Ninth Rheumatism Review), Ann. Int. Med. **28**: 309, 1948.

administered in doses of 10 mg. four times daily, commencing Jan. 23, 1950, for 14 consecutive days. It was preceded and followed by placebo injections. Within 48 hours there was a progressive decrease in joint pain and stiffness; a full range of movement was possible at the end of 10 days. Joint swelling and effusion gradually subsided in three days, but slight residual thickening persisted. The patient became fully ambulatory by the fifth day. The lesions in the mouth and on the glans penis healed in seven days. The sedimentation rate dropped to 1 mm. per hour. Although his mental outlook improved significantly he became emotionally more labile, experiencing periods of elation and on one occasion displaying unusual depression with weeping.

Within 24 hours of the discontinuance of the drug, pain and stiffness recurred in the right knee and fluid reappeared in the joint. Acute glossitis developed after 24 hours, progressing to superficial erosions along the margins of the tongue, while similar erosions occurred on the roof of the mouth. The genital lesions did not recur. Two weeks later the mucosal lesions were again healed, and all joint swelling subsided in four weeks. The patient was discharged from the hospital on April 26, 1950 without disability and is now employed.

CASE 3.—D. A. F., a married man aged 24 years, was admitted to the hospital in 1946 with pain, swelling and effusion of about 12 months' duration in the left knee. He denied any history of venereal disease. The swelling subsided promptly over a period of six weeks, but shortly afterward recurred in both knees. He received a course of gold sodium thiomalate (myochrysine®) totaling 1.675 Gm. and a course of fever induced by typhoid vaccine, but he had frequent exacerbations in one or both knees over a period of 30 months. The arthritis finally subsided, and he remained well for one year before his present admission.

On March 26, 1950 he noticed a cloudy urethral discharge, and when he awakened the next morning both knees were red, swollen and acutely painful. Two days later a diffuse vesicular eruption appeared over the glans penis with rupture of some of the vesicles, leaving small superficial erosions. On the fifth day both ankles were involved. The illness was associated with fever, excessive sweating, anorexia and on one occasion nausea and vomiting. There was no diarrhea. He was admitted to Sunnybrook Hospital on April 3, 1950.

On admission the patient was acutely ill and perspiring profusely. His temperature was 101 F. There was injection of the conjunctival vessels but no purulent discharge. A small herpetic lesion was on the upper lip. Lymphadenopathy was not present, and the spleen was not palpable. A diffuse vesicular eruption covered the glans penis, extending back beyond the corona, and there was a purulent urethral discharge. Both knees were hot, red, swollen and acutely tender. Movement produced excruciating pain. Both ankles were tender with slight swelling in the right ankle. Urethral smears were negative for neisserian organisms. The reaction of the blood to the Kahn test was negative, and the sedimentation rate (Westergren) was 110 mm. per hour.

His condition remained relatively unchanged during the first 12 hospital days, except for clearing of the urethral discharge. Treatment with pituitary adrenocorticotropic hormone was begun April 13, 1950 in doses of 25 mg. every six hours for 14 days.

The joints remained acutely painful for the first four days, after which there was a gradual but progressive decrease in the pain, swelling and tenderness, and a noticeable clearing of the genital lesions. He was ambulatory after 10 days with little pain in the knees, although he could not extend them fully. There was slight periarticular swelling, some tenderness and a little fluid in each knee at the end of 14 days. The penile lesions healed completely, and the sedimentation rate dropped to 39 mm.

Within 14 hours of discontinuance of the drug the patient had a severe relapse with acute pain, swelling and increased heat in all the joints previously affected plus pain and swelling in the left wrist and left shoulder. Several ulcers appeared on the tongue, and the urethral discharge recurred, with a return of the vesicular lesions on the glans penis. The sedimentation rate increased to 93 mm. in seven days. On the third day after therapy ended he had several episodes of oppressive pain in the retrosternal area, lasting up to 30 minutes without radiation and unaffected by breathing.

Eight days after discontinuance of the drug the patient was started on cortisone acetate administered intramuscularly in two daily injections. He received 300 mg. daily for 3 days, 200 mg. daily for 10 days and 150 mg. daily for 10 days, totaling 4.4 Gm. Slight improvement was evident within 24 hours, becoming more definite after 48 hours with decrease in joint pain and swelling, increase in range of movement and clearing of the urethral discharge and genital lesions. By the sixth day he had little joint pain; by the eighth day he was ambulatory. Improvement was gradual thereafter, but although he was able to walk comfortably he continued to have slight tenderness in all the affected joints, with some residual swelling and a little fluid in each knee joint. Flexion and extension of the knees remained slightly limited. The sedimentation rate dropped to 31 mm. by the sixteenth day.

Relapse of joint symptoms after the withdrawal of cortisone intramuscularly given was more gradual than that after pituitary adrenocorticotropic therapy. There was slight increase in pain, tenderness and swelling in all the affected joints within 48 hours. A small number of vesicles again appeared on the penis after 72 hours. Within seven days there was a full relapse of the arthritis with increased pain and swelling in the knees, the ankles and the left wrist, though somewhat less severe than that following the initial course of hormonal therapy. The sedimentation rate increased progressively to a maximum of 108 mm. after 12 days. Although some improvement occurred during the next five weeks, the patient continued to have pain with swelling in the affected joints and the erythrocyte sedimentation rate remained high.

After Freyberg[8] and Hench[9] reported the effectiveness of cortisone orally in tablet form this patient was given a second course of cortisone acetate by the oral route, using the injectable material as supplied in ampul form. The drug was given in two divided doses, 12 hours apart, commencing July 4, 1950. He received 300 mg. orally each day for three days, 200 mg. daily for 10 days and 150 mg. daily for 4 days, a total of 3.5 Gm.

On this occasion there was a noticeable reduction in joint pain and stiffness within six hours and nearly complete relief of pain and local tenderness in 24 hours. Range of movement at the knees returned almost to normal, and he again became ambulatory. During this remission, as in the others, slight swelling with a small amount of fluid persisted in the knees, although pain was for the most part abolished. The sedimentation rate dropped progressively to 23 mm. per hour by the seventeenth day.

It appeared that the remission induced by the orally administered cortisone was in every way comparable to that following pituitary adrenocorticotropic or cortisone therapy by intramuscular injection. Subjective relief of joint pain and stiffness actually occurred more quickly. Withdrawal of the hormone was again followed by an increase in the sedimentation rate and a return of joint pain over a period of five to seven days. This time, however, the relapse was of a rather mild character and did not confine the patient to bed. He is still under observation, although he is considerably improved.

CLINICAL OBSERVATIONS

The foregoing case reports clearly demonstrate that patients with so-called Reiter's syndrome respond dramatically to the administration of either pituitary adrenocorticotropic hormone or cortisone. The improvement in these patients was prompt and sustained during the period of drug administration. Joint swelling subsided rapidly and pain and tenderness disappeared, although some evidence of residual arthritis persisted in a mild form. Relapse on withdrawal of the hormones was rather prompt in all cases, but the symptoms usually

8. Freyberg, R. H.: Data read before the American Rheumatism Association, San Francisco, June 23, 1950.
9. Hench, P. S.: Data read before the American Rheumatism Association, San Francisco, June 23, 1950.

were not as severe and the subsequent course was one of improvement. The skin and mucosal lesions followed a similar pattern.

No appreciable difference could be detected in the clinical response to the two drugs in the third patient, except that the relapse after the intramuscular injection

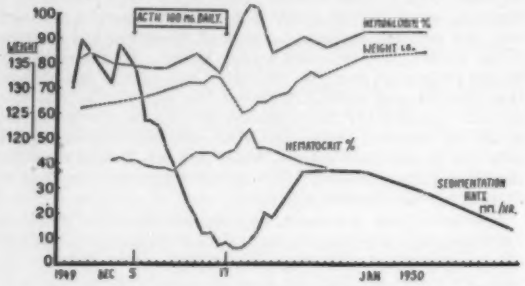

Fig. 1 (case 1). — Effect of pituitary adrenocorticotropic hormone (ACTH) on hemoglobin, hematocrit, sedimentation rate and body weight.

of cortisone was more gradual and less severe, but this was probably due to his initial improvement after the use of pituitary adrenocorticotropic hormone.

When cortisone was given in comparable doses in this patient, it was equally effective in inducing a remission of symptoms whether it was administered by the intramuscular or the oral route. The response was prompter following its oral administration and appeared to be equally well sustained. This observation has also been confirmed in patients with rheumatoid arthritis,[10] although there is some indication that the required dose may be a little larger than with intramuscular injections. Recurrence of joint pain after orally administered cortisone was much less severe than after the intramuscular injections, possibly due to the over-all benefit derived from the previous two courses of hormone administration.

The fact that in two patients a single course of pituitary adrenocorticotropic therapy was able to produce a prompt remission of the disease, followed by a mild short-lived relapse which went on to gradual recovery, is significant from the point of view of a practical therapeutic measure. It was believed that the course of the illness was materially shortened in both instances and probably also in the third. In rheumatoid arthritis such lasting benefit has been observed only in an occasional patient,[11] and the more hopeful result in Reiter's syndrome is no doubt due to the self limited nature of this disease.

Only one of the three patients (case 3) was febrile when the present observations were begun. The oral temperature dropped from levels of 101 to 102 F. to normal within 24 hours of institution of pituitary adrenocorticotropic therapy but rose promptly the day after the drug was withdrawn. It again dropped to normal within three days of his receiving cortisone, but on withdrawal it again became elevated, though not to its previous level.

Decided stimulation of appetite with gain in weight was evident in all three patients. Some of the weight gain was obviously due to water retention and was promptly lost when hormonal therapy was discontinued, but part of the gain was nutritional and was maintained. Improvement in mental outlook was prominent in all three patients, and a mild euphoria was noticeable in one. One patient was exceedingly labile and exhibited a transient mild depression with weeping on one occasion.

Serious complications were not observed. Transient pain at the site of injection was common. Two patients had a mild acneform eruption on the face and shoulders. Ringing in the ears occurred in one patient but was not troublesome. Two patients complained of moderately severe, constricting pain across the anterior part of the chest or retrosternally, beginning within two or three days after discontinuance of pituitary adrenocorticotropic hormone. This occurred in episodes lasting up to half an hour but was not associated with sweating or signs of shock. Examination of the heart revealed no evidence of cardiac impairment, and the symptoms subsided within two days. In one patient the retrosternal pain was accompanied with recurring abdominal cramps without diarrhea. No significant change in blood pressure or heart size was noted.

LABORATORY OBSERVATIONS

A decrease in the total circulating eosinophils was observed during administration of both hormones. Cortisone was effective (case 3) in lowering the eosinophil count whether given by the intramuscular or the oral route, but toward the end of the period of intramuscular administration the total count increased gradually to its previous level, although symptoms were well controlled.

The total white blood cell count increased in two patients while they were receiving one of the two drugs. One patient showed no rise in leukocyte count. The counts increased to as much as 24,200 per cubic millimeter, due entirely to a polymorphonuclear leukocytosis. There was little alteration in the absolute number of lymphocytes.

The hemoglobin concentration and red blood cell counts decreased slightly during the period of hormonal administration. This was interpreted as being due to

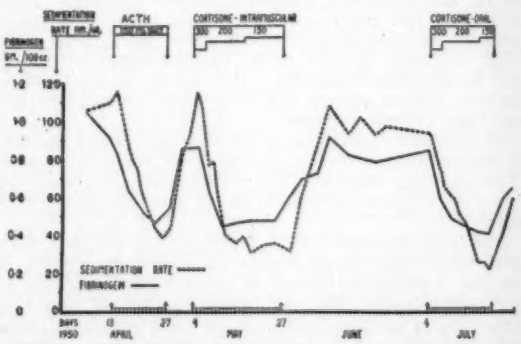

Fig. 2 (case 3). — Effect of pituitary adrenocorticotropic hormone (ACTH) and cortisone on sedimentation rate and plasma fibrinogen.

hemodilution, since it coincided with evidence of water retention. On the discontinuance of treatment with either of the agents there was a rise in both the hemoglobin and red cell counts coinciding with the period of water diuresis and weight loss. The rise was interpreted as being largely due to hemoconcentration because the count subsequently dropped, but the rise was also due

10. Ogryzlo, M. A.: Unpublished data.
11. Hench, P. S., and others: Effects of Cortisone Acetate and Pituitary ACTH on Rheumatoid Arthritis, Rheumatic Fever and Certain Other Conditions, Arch. Int. Med. 85:545 (April) 1950.

in part to an absolute increase since in two patients it was subsequently maintained at a higher level.

Sedimentation rates dropped rapidly to normal or near normal levels during both forms of therapy but increased again on withdrawal. The decrease in sedimentation rate was as prompt with orally administered cortisone as with the intramuscularly given drug. With the more lasting clinical improvement after the discontinuance of pituitary adrenocorticotropic therapy the sedimentation rate again dropped in a corresponding fashion in the two patients whose studies are complete (fig. 1).

Estimation of the urinary electrolytes in one patient (case 1) maintained on a fixed intake of sodium and potassium showed decided sodium and chloride retention during the first three days of his receiving pituitary adrenocorticotropic hormone and an immediate pronounced diuresis on withdrawal. The potassium excretion showed little change. Serum sodium and chloride levels were raised, while the serum potassium was lowered by the administration of the drug.

Two patients (cases 2 and 3) who were maintained on a constant dietary intake showed a decided increase in the daily excretion of total nitrogen, urea nitrogen and amino acid nitrogen in the urine, while they were receiving pituitary adrenocorticotropic hormone; these values fell sharply on withdrawal of the drug. The increase was sufficient to induce a negative nitrogen balance. Uric acid excretion was only moderately increased, and the serum uric acid was lowered slightly.

The serum protein fractions were normal in all three patients. A significant drop in the total globulin occurred in each instance, largely because of a drop in the euglobulin fraction. The plasma fibrinogen was abnormally high in two patients (cases 1 and 3) and was observed to drop dramatically to normal levels while they were receiving either of the two drugs. The third patient (case 2) also showed a drop in plasma fibrinogen, even though it remained within the normal range. On withdrawal of either of the two hormones the plasma fibrinogen levels again rose to approximately their former levels. In patients with rheumatoid arthritis the level of plasma fibrinogen has been observed to parallel closely the clinical activity of the disease process and to bear a close relation to the erythrocyte sedimentation rate.[12] The same parallelism of clinical activity, sedimentation rate and plasma fibrinogen was observed in these patients (fig. 2).

A definite decrease in tolerance to orally administered glucose was demonstrated in two patients, with an elevation of tolerance curve, during the period of pituitary adrenocorticotropic therapy. Glycosuria was not noted. A significant increase in the daily excretion of the urinary 17-ketosteroids occurred in all three patients while they were receiving the hormone. No change was observed in the basal metabolic rate in one patient. Electrocardiographic changes were confined to slight lowering of the height of the T waves during the period of administration of either of the hormones. This was probably due to a lowering of the serum potassium. Electroencephalographic changes were minimal. In two patients low voltage, slow wave activity, three to six per second, appeared during the period of pituitary adrenocorticotropic hormone administration, with a return to the previous alpha rhythm on withdrawal.

12. Fletcher, A. A.; Dauphinee, J. A., and Kelly, H. G.: Unpublished data.

SUMMARY

Pituitary adrenocorticotropic hormone (ACTH) was administered to three patients with the clinical symptoms of Reiter's syndrome. One of these subsequently received cortisone both intramuscularly and orally. The response in each instance was prompt and dramatic. Withdrawal of the hormones was followed by a relapse of symptoms, mild in two patients and more severe in one. Two of the patients have recovered after the initial relapse and are now fully employed, but the third is still under observation. The course of the disease was materially shortened in the two patients who have recovered and probably in the third. The sustained improvement in two patients suggests a possible therapeutic application of pituitary adrenocorticotropic hormone and cortisone in a self limited disease such as Reiter's syndrome. Cortisone was effective in inducing a remission of symptoms whether administered by the intramuscular or oral route.

HYPERTHYROIDISM, PREGNANCY AND THIOURACIL DRUGS

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The literature on the use of thiouracil drugs in the treatment of hyperthyroidism complicated by pregnancy is scant and in most instances is confined to reports of one or two cases. My experiences and those of associates at the Lahey Clinic with 21 such cases are, therefore, being reported with the hope of partly filling in this gap in our knowledge.

Since the introduction of thiouracil in 1943, this drug or its derivatives have been used at the clinic in the preoperative preparation of over 1,900 thyrotoxic patients. There were 21 women whose hyperthyroidism was complicated by pregnancy. Three patients had recurrent hyperthyroidism, and 18 had primary hyperthyroidism. Subtotal thyroidectomy was performed on each patient during the course of the pregnancy after she had been prepared with one of the thiouracil drugs and strong iodine (Lugol's) solution. The duration of hyperthyroidism ranged from two months to four years. The duration of pregnancy at the time of operation ranged from three weeks to five months. The average basal metabolic rate before antithyroid treatment was + 48 per cent and before operation + 10 per cent. The amount of thyroid tissue removed at operation averaged 70 Gm. Antithyroid drugs were administered for periods ranging from 28 to 90 days; all 21 mothers underwent thyroid surgery without complications and recovered fully. The pregnancy did not influence the course of the hyperthyroidism or its response to thiouracil drugs.

Follow-up reports from the patients on the pregnancies are incomplete. Since the clinic does not have an obstetrics department, all patients who had undergone thyroid operation were referred to their own obstetricians for further care. No special thyroid or iodine treatment was prescribed. Six women have not yet reached full term and are apparently well. Ten women were delivered at term of 11 normal children. One woman aborted at five months, and two women were delivered prematurely at eight months; one of a

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macerated stillborn fetus and the other of a "deformed" [1] baby who died four hours after birth. Preeclampsia developed in one patient near term, and the child died at birth. One woman was delivered by cesarean section at term, and the baby died six hours later. The fetal loss in the 15 patients whose pregnancies have terminated is 33 per cent.

Reports on 11 living children indicate that all were normal at birth and have developed normally since then. Their present ages range from 11 months to 5 years. One set of twins is now 5 years old; both children are well in all respects.

COMMENT

The association of hyperthyroidism and pregnancy is uncommon. The incidence of hyperthyroidism among pregnant women is about 0.2 per cent, whereas the incidence of pregnancy in patients with hyperthyroidism ranges from 0.41 to 3.0 per cent.[2]

The number of cases herein reported is too small to permit final conclusions. The outstanding fact, however, is the unsuccessful outcome of five pregnancies. Such a result may well have been inevitable and totally unrelated to the thyroid disease, the antithyroid medication or the thyroid operation. Nevertheless, inspection of such a relation is worthy of consideration.

The problems presented by this combination of conditions may be considered under three main divisions: (1) the mother and the hyperthyroidism, (2) the pregnancy and its complications and (3) the child.

THE MOTHER

With the use of the thiouracil drugs, it is now possible to control hyperthyroidism completely, no matter how severe it may be. Full control of hyperthyroidism permits the surgeon to perform subtotal thyroidectomy with little risk to the patient and with an excellent chance of obtaining a complete remission of the disease. At the clinic, we have felt that the patient who has the combination of hyperthyroidism and early pregnancy should have the hyperthyroidism eliminated by subtotal thyroidectomy after preparation with one of the thiouracil drugs and strong iodine solution. Reports in the literature provide ample evidence that subtotal thyroidectomy during the course of pregnancy does not disturb the pregnancy. Abortions immediately following thyroid operations are unusual, and the postoperative complications of tetany or myxedema are rare. Our pregnant patients have had subtotal thyroidectomy performed through the fifth month of pregnancy, and the operation is probably safe through the first six months. Hyperthyroidism during the last trimester is probably best treated by antithyroid drugs until sometime after delivery when subtotal thyroidectomy can be done.

THE PREGNANCY

Uncontrolled hyperthyroidism is accompanied by a high incidence of abortions, premature births and toxemias. Javert [3] reported an incidence of toxemia of pregnancy associated with hyperthyroidism of 77 per cent, Kibel [4] 55 per cent and McLaughlin and McGoogan [5] 26 per cent. Brandes [6] at the Mayo Clinic found no increase in toxemias of pregnancy among 75 patients with hyperthyroidism. This wide discrepancy in reports is difficult to explain, but the weight of evidence favors the fact that toxemias may occur oftener when hyperthyroidism complicates the pregnancy. Relief of the hyperthyroidism as quickly as possible would eliminate whatever influence this factor may have on the incidence of such complications.

Hypothyroidism, on the other hand, has also been thought to be an important factor in the cause of toxemias of pregnancy. Hughes [7] found that the administration of desiccated thyroid to all normal pregnant women with basal metaboilc rates below zero reduced the incidence of preeclampsia by 50 per cent as compared with an equally large control group to whom no thyroid was given. Patterson, Nicodemus and Hunt [8] claimed that a relative state of hypothyroidism leads to changes in the placenta which produce late toxemias of pregnancy and that the administration of desiccated thyroid early in pregnancy would prevent these.

Peters, Man and Heinemann [9] found that the serum-precipitable iodine is high throughout normal pregnancy, falling shortly before delivery. Their data suggest that, if the serum-precipitable iodine is low early in pregnancy, miscarriage is likely to occur. Administration of thyroid to such patients resulted in a rise in the level of serum-precipitable iodine and permitted the patients to go to term.

Delfs and Jones,[10] in a study of abortion, found that low chorionic gonadotropins were often associated with abortions and that low thyroid function was found to occur frequently with low chorionic gonadotropins. Decreased thyroid function may possibly be a major factor in the cause of recurrent abortions.

Hypothyroidism induced in female adult rats by prolonged administration of thiouracil drugs does not cause sterility but does interfere with the continuation of gestation, causing resorption of fetuses in 100 per cent of cases. If the drug is given for less than 100 days some rats do deliver normal litters. It was concluded that resorption of fetuses was the result of the induced myxedema and not of the thiouracil toxicity.[11]

The management of hyperthyroidism in pregnancy with thiouracil drugs either preoperatively or as prolonged treatment must, therefore, take into account the possible harm to the pregnancy from the inadvertent production of myxedema. Furthermore, the temporary depression of the metabolism which often occurs during the first three or four months following thyroidectomy should be viewed with equal concern.

1. It has been impossible to obtain further information on this report.
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8. Patterson, W. B.; Nicodemus, R. E., and Hunt, H. F.: Hypothyroidism: Etiologic Factor in Eclampsia, Pennsylvania M. J. **41**: 983-988 (Aug.) 1938.
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11. Jones, G. E. S.; Delfs, E., and Foote, E. C.: Effect of Thiouracil Hypothyroidism on Reproduction in the Rat, Endocrinology **38**: 337-344 (June) 1946.

THE CHILD

The possible effect of thiouracil on the fetus has been the center of attention of recent writers. In 19 reports [12] on the outcome of pregnancy in women who have received the thiouracil drugs, there were 22 normal children. Two fetuses were examined at five months, when the pregnancy was interrupted, and both were found to have hyperplastic and enlarged thyroids. One full term infant had an enlarged thyroid, which eventually returned to normal size. One child was born prematurely but was otherwise normal. One child was an anencephalic monster whose thyroid was found to be normal, and exophthalmos developed in one child, normal at birth, at 2 months of age with subsidence at 3 months of age.

Experimental use of thiouracil drugs in pregnant rats has resulted in activation and hyperplasia of the thyroid and retarded growth in the offspring, changes which are temporary if treatment with the drug is stopped.[13]

Freiesleben and Kjerulf-Jensen [14] in experiments on rats proved that thiouracil compounds are transmitted from mother to fetus through both the placenta and the breast milk. Furthermore, thyroid hyperplasia in infantile rats could be prevented by concurrent administration to the mothers of thyroid hormone along with the thiouracil drug. They concluded that the danger to infants is not from the thiouracil itself but from the low concentration of thyroxin in the tissues, induced by the thiouracil.

In 1921 Marine and Kimball [15] noted that Halsted had shown in dogs that if the thyroid is removed before or at an early stage of pregnancy and rigid precautions are taken to exclude iodine the young at birth have enlarged thyroids, whereas if iodine is available the young at birth will have normal thyroids. In addition, these same authors reported that there is always a decrease in the iodine content of the mother's thyroid during pregnancy and that the administration of iodine to all pregnant women (particularly in the goiter belt) lessened drastically the incidence of congenital goiter, cretinism and other evidences of thyroid dysfunction.

Parkin and Greene,[16] reporting on pregnancy occurring in cretinism and myxedema, cited the histories of six women who came under their observation. One was pregnant at the time of writing. The other five had had a total of 10 pregnancies, six ending in delivery of full term normal infants and three terminating in abortions—a fetal loss of 30 per cent.

Reports on hyperthyroidism and pregnancy in which the outcome of the pregnancies is recorded indicate a fairly high percentage of fetal loss. Gardiner-Hill [17] found that 54.5 per cent of such pregnancies terminated unsuccessfully. Clute and Daniels [18] reported 15 pregnancies in which subtotal thyroidectomy was done during the pregnancy with the excellent results of 14 normal living babies and one miscarriage. Mussey, Plummer and Boothby [19] in 1926 reported 42 pregnancies with adequate follow-up of 37; the fetal loss was seven, or 19 per cent. Mussey, Haines and Ward [19a] (1948) reported an additional 30 pregnancies associated with hyperthyroidism in which the follow-up of 20 was adequate. The fetal loss was four out of 20, or 20 per cent.

CONCLUSIONS

Several factors appear to influence the pregnancy which is complicated by hyperthyroidism, namely, the hyperthyroidism, thiouracil drugs, iodine lack and thyroid hormone lack. The hyperthyroidism can be quickly terminated with little risk to the mother by the use of antithyroid drug preparation and subtotal thyroidectomy. Furthermore, after such treatment, the babies which are born alive at full term, although rarely showing transient enlargement of the thyroid, are usually normal and develop normally thereafter. Attention must be focused chiefly on the difficulties arising in the pregnancy and the fetus. Uncontrolled hyperthyroidism is attended by a high incidence of fetal loss and late complications of pregnancy, but with current antithyroid therapy uncontrolled hyperthyroidism should cease to be a problem. Myxedema or decreased thyroid function is detrimental to the outcome of the pregnancy as well as to the offspring. It is likely that this factor may be most important in the progress of the pregnancy and measures to combat it may possibly prove to be most valuable. The use of desiccated thyroid or iodine in pregnancy is not a new idea, but its use in connection with pregnant patients who have been treated with thiouracil drugs and subtotal thyroidectomy for hyperthyroidism has not been emphasized or urged. Whether the results of pregnancy can be improved remains to be seen, but it seems desirable to apply the following suggestions:

1. Induced myxedema should be avoided in patients receiving a thiouracil drug by repeated observations of the metabolic rate and blood cholesterol throughout the period of medication. It is to be remembered that the basal metabolic rate in normal pregnant women remains at a normal level until the sixth month. Thereafter it rises to a level of + 20 or + 25 per cent during the last trimester.

2. Lowered metabolic levels after thyroidectomy should be avoided by the administration of desiccated thyroid throughout the remainder of the pregnancy. One to 2 grains (60 to 120 mg.) of desiccated thyroid daily should provide enough thyroid hormone and probably enough iodine to eliminate any existing iodine and thyroid hormone lack, and 3 to 5 drops of strong iodine solution daily would certainly provide sufficient iodine.

3. The above measures may prove to be sufficient in those women whose histories reveal other normal pregnancies. In those women with histories of previous unsuccessful pregnancies the diethylstilbestrol therapy

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18. Clute, H. M., and Daniels, D. H.: Hyperthyroidism and Pregnancy, Am. J. M. Sc. **179**: 477-482 (April) 1930.

19. Mussey, R. D.; Plummer, W. A., and Boothby, W. M.: Pregnancy Complicating Exophthalmic Goiter and Adenomatous Goiter with Hyperthyroidism, J. A. M. A. **87**: 1009-1012 (Sept. 25) 1926.

of Smith and Smith[20] should be added to the aforementioned measures. These authors have obtained excellent results in the prevention of late complications of pregnancy and associated fetal loss. Its use in our type of patient, by helping to maintain normal growth and development of the placenta, may possibly improve our current statistics of 33 per cent fetal loss.

4. Closer cooperation between obstetricians and thyroidologists is urged. Careful follow-up of the results of pregnancy in women with hyperthyroidism may throw further light on this aspect of the problem, and the actual need for such treatment as suggested herein may be more clearly defined.

SUMMARY

Study of 21 women whose hyperthyroidism complicated their pregnancy revealed the following facts:

1. Subtotal thyroidectomy after preparation with thiouracil drugs and iodine can be done safely during the first two trimesters with little risk to the patient and with remission of the hyperthyroidism.

2. Full term living infants born to such patients have been normal.

3. Results of pregnancy in 15 women who have been followed to term include 10 full term normal deliveries with 11 healthy children, one abortion at five months, two premature births at eight months (one a macerated fetus and one deformed infant that died four hours after birth), one case of toxemia at term with death of the infant and one cesarean section at term with death of the infant six hours later. This represents a fetal loss of 33 per cent.

4. A higher fetal salvage is desirable, and arguments are presented which show the dangers particularly of hypothyroidism which either is induced by antithyroid drugs or occurs subsequent to thyroidectomy.

5. Therapy directed toward fetal salvage is suggested and includes the avoidance of overdosage with antithyroid drugs, the administration of thyroid and iodine after thyroidectomy and the possible use of diethylstilbestrol therapy throughout pregnancy.

20. Smith, O. W.: Diethylstilbestrol in the Prevention and Treatment of Complications of Pregnancy, Am. J. Obst. & Gynec. **56**: 821-834 (Nov.) 1948. Smith, O. W., and Smith, G. V.: Use of Diethylstilbestrol to Prevent Fetal Loss from Complications of Late Pregnancy, New England J. Med. **241**: 562-568 (Oct. 13) 1949.

Rabies in Animals.—In the United States, epizootics in skunks have been responsible for at least fifty cases of human rabies. A nickname for skunks in the West is "phobey" cat because of the animal's role in causing hydrophobia. In Kansas, in 1873, about forty people, primarily men who camped out on the plains, died of rabies caused by skunk bites. In Arizona, in 1907, rabid skunks were said to have caused the death of 10 people. California, Oregon and Nevada had a huge outbreak of rabies in wild animals in 1915 and 1916. The coyote was the principal vector in this case. To illustrate how a vigorous campaign of wildlife decimation will stop an epidemic of rabies and eventually eradicate it, Nevada's experience is worth citing. By 1931, that State had rid itself of rabies, but only after 89,000 coyotes, bobcats and mountain lions were destroyed as well as several thousand smaller mammals. Fox rabies has been on the increase in the United States since 1940. Especially involved have been the Southeastern States. However, New York State has a remarkable feature; dog rabies has been controlled effectively while fox rabies is still rampant. In those areas where wildlife rabies exists, there is also a correspondingly great loss from cattle rabies. New York State is such an example.—Raymond Fagan, Rabies in Animals Other Than Dogs, *CDC Bulletin*, U. S. Public Health Service Commonwealth Disease Center, Atlanta, Ga., October 1950.

RELATION OF CREATININE TO NONPROTEIN NITROGEN IN AZOTEMIC STATES

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Extrarenal azotemia, it seems to us, is a nonspecific term that has been used to describe such varied conditions as acute renal insufficiency, reversible uremia, lower nephron nephrosis, shock kidney and crush syndrome. The use of these terms almost interchangeably in the literature has resulted in considerable confusion. It is probable that many of the conditions classified under these headings are of different pathogenesis and that the pathological picture in the kidney will vary. Also, the pathogenesis may be of extreme diversity, varying from peripheral vascular collapse in acute toxemias to late secondary shock in traumatic injuries and including medical, surgical, obstetric, dermatological and orthopedic conditions. Because of such diversity, it seems improbable that the renal effect is always identical.

It has been our observation that there were occasional cases in which a disproportion in the relation between creatinine and nonprotein nitrogen existed. It was our general impression that this disproportion was observed more commonly in conditions of extrarenal azotemia. A survey of the English literature has revealed a paucity of information on the significance of the relation between the rise in nonprotein nitrogen values and the rise in creatinine values, especially in conditions other than primary renal insufficiency. Bell and Knutson[1] stated that in extrarenal azotemia there is no constant relation of these two components. Fishberg[2] has observed that the increase in urea content of the blood may be considerable before the creatinine value rises in acute glomerulonephritis and in prerenal azotemia. Patch and Rabinowitch,[3] in a statistical analysis of a large series of observations, reported that when the creatinine values were normal or nearly normal, symptoms of uremia were usually absent in spite of the high urea values. Livermore[4] stated that, while urological obstructive cases early may show a normal or low creatinine content with a high nonprotein nitrogen level, in long-standing obstruction the creatinine and nonprotein nitrogen values are both high. Although numerous detailed studies of the syndrome of extrarenal azotemia appear in the literature,[5] there are curiously few reports on creatinine levels. Therefore, it appeared worth while to investigate this relation in cases of extrarenal azotemia, primary renal azotemia and postrenal or obstructive uropathies.

From the Departments of Medicine, Chicago Medical School and Mount Sinai Hospital, and the Department of Pathology, Hektoen Institute for Medical Research of the Cook County Hospital.

1. Bell, E. T., and Knutson, R. C.: Extrarenal Azotemia and Tubular Disease, J. A. M. A. **134**: 441 (May 31) 1947.

2. Fishberg, A. M.: Hypertension and Nephritis, ed. 4, Philadelphia, Lea & Febiger, 1939.

3. Patch, F. S., and Rabinowitch, I. M.: Urea and Creatinine Contents of Blood in Renal Disease; A Statistical Analysis of 5,000 Observations, J. A. M. A. **90**: 1092 (April 7) 1928.

4. Livermore, G. R.: High Non-Protein Nitrogen and Creatinine with Report of Cases, J. Urol. **57**: 390 (Feb.) 1947.

5. Moon, V. H.: Renal Deficiency Associated with Shock, J. A. M. A. **134**: 425 (May 31) 1947. Corcoran, A. C., and Page, I. H.: Renal Damage from Ferroheme Pigments: Myoglobin, Hemoglobin, and Hematin, Texas Rep. Biol. & Med. **3**: 528, 1945. Burch, G. E., and Ray, C. T.: Lower Nephron Syndrome, Ann. Int. Med. **31**: 750 (Nov.) 1949.

MATERIAL AND METHODS

The patients studied in this investigation were mainly from the Cook County and the Mount Sinai hospitals. The classification of our cases into the three categories was determined by clinical and laboratory findings, and, in many cases, by postmortem examinations. Of the 22 patients with extrarenal azotemia, there were 12 deaths and eight autopsies. Repeated determinations of nonprotein nitrogen by the method of Koch and McMeekin,[6] creatinine by the method of Folin and Wu[7] and urea nitrogen as described by Gentzkow[8] were done on these patients. Urine examinations consisted of determinations of albumin, sugar, acetone and specific gravity and microscopic examination of the sediment. When practicable, total urinary output was measured. The study consists of 22 cases of extrarenal azotemia, 15 of primary renal azotemia and seven cases of postrenal azotemia. All chemical determinations were done in the same research laboratory at the Chicago Medical School by the same technician.

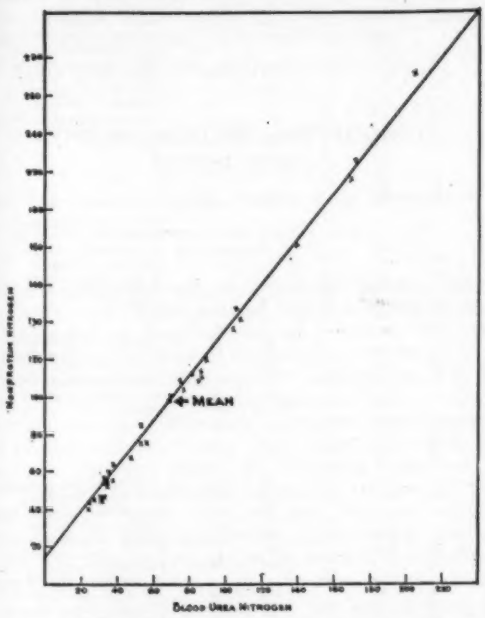

Fig. 1.—Values in all figures are given in milligrams per 100 cc.

There was a wide variety of causative conditions in the cases of extrarenal azotemia, such as pneumonia, heart failure, hepatic diseases, diabetic acidosis, acute pancreatitis, crush syndrome, hyponatremic acidosis, hypochloremic alkalosis and sulfonamide reactions. The causative conditions in the cases of primary renal azotemia were of all the usual types other than acute glomerulonephritis. The postrenal azotemia group consisted of patients with benign prostatic hypertrophy and patients with obstructive cancer of the lower urinary tract. Patients were selected at random in these three categories. The primary object of this report was a study of nonprotein nitrogen partitions in extrarenal azotemia. The other two categories were studied for comparative and control purposes. The treatment of these patients was not under our management. During the period of study, treatment of extrarenal azotemia varied considerably, and, therefore, no consistent form of therapy was followed.

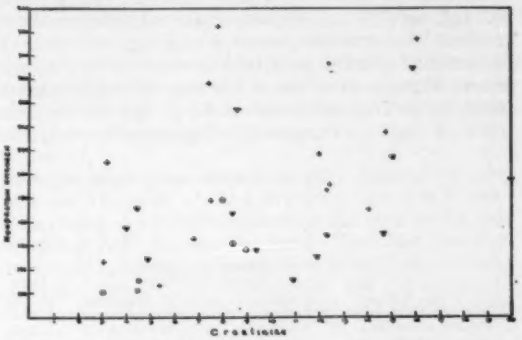

Fig. 2.—Relation of creatinine to nonprotein nitrigen in three types of renal insufficiency. The inverted triangle represents renal insufficiency; the plus sign represents extrarenal insufficiency and the circle postrenal insufficiency.

RESULTS

In the analysis of the nonprotein nitrogen, blood urea nitrogen and creatinine values in 33 serums from 26 patients of all three categories, a linear correlation was found between nonprotein nitrogen and blood urea nitrogen of 0.996 plus or minus 0.001. In 56 serums from 44 patients a correlation coefficient of nonprotein nitrogen to creatinine of 0.892 plus or minus 0.018 was found.

Our data indicate that the nonprotein nitrogen and urea values can be computed from each other by the use of the regression formulas:

$$\text{urea} = 0.82\ (\text{N.P.N.} - 10.3)$$
$$\text{N.P.N.} = 1.21\ (\text{urea} + 12.4).$$

The straight line in figure 1 is drawn from an average of the two regression formulas.

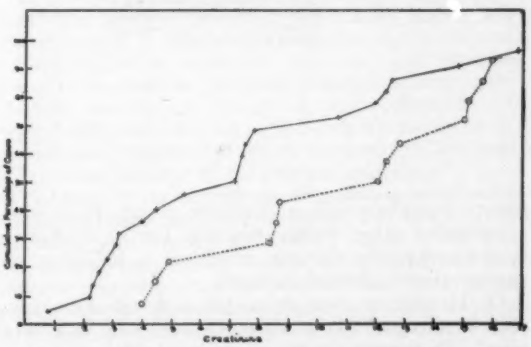

Fig. 3.—Cumulative distribution polygons for creatinine levels in extrarenal and renal azotemia based on values associated with the single or maximum nonprotein nitrogen determination for each case. The unbroken line represents 22 cases of extrarenal azotemia and the broken line 14 cases of renal azotemia.

Our results substantiate the work of previous authors,[9] in that, at lower levels of azotemia, urea constitutes about 50 per cent of the nonprotein nitrogen,

6. Koch, F. C., and McMeekin, T. L.: A New Direct Nesslerization Micro-Kjeldahl Method and a Modification of the Nessler-Folin Reagent for Ammonia, J. Am. Chem. Soc. **46**: 2066 (Sept.) 1924.
7. Folin, O., and Wu, H.: A System of Blood Analysis, J. Biol. Chem. **38**: 81 (May) 1919.
8. Gentzkow, C. J.: Accurate Method for Determination of Blood Urea Nitrogen by Direct Nesslerization, J. Biol. Chem. **143**: 531 (April) 1942.
9. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Interpretation, ed. 2, Baltimore, Williams & Wilkins Company, 1946, vol. 1.

and at progressive increments of nonprotein nitrogen it rises to constitute almost 90 per cent.

Of the 13 patients with primary renal azotemia with nonprotein nitrogen values above 100 mg. per 100 cc. only two had creatinine values below 8 mg., the lowest being 4.4 mg.; whereas, of the 14 patients with extrarenal azotemia with nonprotein nitrogen values above 100 mg. per 100 cc., 10 had occasional determinations in which the creatinine value was 8 mg. or less. Of six patients who had postrenal azotemia with the nonprotein nitrogen value above 100 mg., all had occasional creatinine determinations below 8 mg., one of which was below 4 mg. Although no diagnostically statistical pattern was discernible in the three groups, in general a creatinine value disproportionably low as compared to the nonprotein nitrogen increment is indicative of extrarenal or postrenal azotemia.

Of 14 patients with extrarenal azotemia with nonprotein nitrogen values above 100 mg., only four survived. Postmortem examinations in nine cases revealed the cause of death to be the primary disease or trauma rather than the secondary renal involvement, although undoubtedly the acute renal insufficiency was a major factor in hastening death. The essential features of the four surviving patients with extrarenal azotemia with nonprotein nitrogen values above 100 mg. are shown in the table. Quantitative phenol and xanthoproteic determinations on these patients will be reported in another communication.

Clinical Data on Four Patients with Reversible Acute Renal Insufficiency with Complete Recovery

	History and Salient Physical Findings	Date	Nonprotein Nitrogen, Mg./100 Cc.	Blood Urea Nitrogen, Mg./100 Cc.	Creatinine, Mg./100 Cc.	Hemoglobin	Chloride, mEq.	Carbon Dioxide Combining Power, Vol. %	Course and Therapy
E. S., 42 yr. old Negro man; rheumatic heart disease; mitral and aortic valvulitis; recurrent congestive failure; salt depletion syndrome	Symptoms of recurrent congestive failure for 3 yr. Discharged from hospital on 7/12/48, symptom free; given biweekly mercurial injections with low salt diet; readmitted 1/18/49 in acute congestive failure; given daily mercurial injections and digitalis; compensation effected in 3 days, but mercurial injections continued to 1/26/49	6/ 3/48	38	...	...	..	...	..	Symptoms of salt depletion syndrome recognized 1/28/49. Given 2,000 cc. isotonic sodium chloride solution intravenously for 2 days and salt by mouth ad lib. Maintenance doses digitalis continued. Discharged in well-compensated state on moderately low salt diet
		7/12/48	45	...	...	..	...	..	
		1/18/49	57	...	1.7	..	...	..	
		1/26/49	142	...	6.2	..	...	..	
		1/27/49	133	...	8.7	..	...	..	
		1/28/49	102	104	9.0	41	...	..	
		1/29/49	102	...	8.7	..	104	15	
		1/31/49	178	139	7.5	34	106	..	
		2/ 1/49	156	110	4.7	34	113	38	
		2/ 2/49	108	88	2.8	32	...	..	
		2/ 4/49	75	55	2.1	27	...	..	
		2/ 7/49	52	33	2.1	33	108	..	
		2/ 8/49	53	...	2.4	33	...	..	
		2/14/49	46	30	1.7	34	...	..	
		2/16/49	61	41	2.7	33	...	..	
		2/21/49	45	28	1.8	32	117	..	
A. H., 38 yr. old Negro woman; diabetic acidosis with coma	Admitted to hospital 1/10/49 with typical findings of severe diabetic acidosis; temp. 102 F.; Kussmaul respirations; deep coma; high blood sugar; urine showed 4+ sugar and acetone	1/14/49	142	...	...	..	...	..	Usual treatment of severe diabetic acidosis. Complete recovery of consciousness within 24 hours. Urine free of sugar and acetone in 48 hours
		1/15/49	152	...	7.2	..	...	..	
		1/17/49	150	...	8.0	..	...	..	
		1/18/49	145	120	6.8	46	...	..	
		1/19/49	140	107	5.5	35	...	..	
		1/21/49	83	65	3.1	30	...	..	
		1/24/49	46	30	1.6	26	...	..	
		1/25/49	36	22	1.4	26	...	..	
G. S., 26 year old white woman; acute alcoholic gastritis; prolonged vomiting; profound electrolyte disturbance	Admitted in semistuporous condition; continuous vomiting 2 days prior to admission; extreme dehydration; treatment of alkalosis with excessive amounts of ammonium chloride, saline and 1/6 M lactate resulted in swing to acidosis and hemodilution on 2/11/49	2/ 5/49	93	...	...	..	67	92	Electrolyte balance established and patient made a complete recovery. Discharged symptom-free with a normal blood chemistry
		2/ 7/49	107	...	5.8	..	97	27	
		2/ 8/49	107	86	5.4	30	98	..	
		2/ 9/49	108	86	5.4	27	...	..	
		2/11/49	99	...	4.2	..	118	35	
		2/14/49	64	...	2.8	..	...	46	
		2/15/49	47	31	2.6	21	...	..	
		2/17/49	48	22	2.5	22	...	..	
		2/21/49	44	24	2.1	23	100	..	
		2/28/49	36	16	2.0	32	...	..	
S. P., 64 yr. old white man; sulfonamide nephrosis; acute renal insufficiency	Influenzal type respiratory infection treated with sulfonamides; admitted to hospital 3/14/49 with uremic symptoms, twitching, semistuporous, pronounced oliguria; urinary output less than 300 cc. daily for 4 days	3/14/49	126	84	11.5	..	82	39	10% dextrose intravenously and orange juice by mouth, total limited to 1,000 cc. daily during period of oliguria. Given fluids to balance output and saline as needed for electrolyte balance during subsequent period of diuresis. Complete recovery effected
		3/15/49	135	90	11.6	43	94	42	
		3/16/49	...	...	...	..	96	41	
		3/17/49	164	...	13.4	39	103	42	
		3/18/49	170	...	14.1	38	106	32	
		3/19/49	189	105	16.8	..	102	43	
		3/20/49	...	104	...	..	106	48	
		3/21/49	150	...	11.1	40	...	..	
		3/22/49	122	92	9.2	..	104	53	
		3/23/49	130	95	6.2	36	...	57	
		3/24/49	122.5	85.5	6.6	..	105	64	
		3/25/49	101	...	4.8	36	...	..	
		3/26/49	...	59	...	..	114	50	
		3/28/49	73	45	2.3	38	113	49	
		3/30/49	58	40	2.4	35	107	49	
		4/ 1/49	...	37	...	..	102	50	

COMMENT

The wide range of creatinine values in the extrarenal group is of interest. In one fatal case of nephrosis due to sulfonamides the nonprotein nitrogen rose to 352 mg. per 100 cc., at which time the creatinine value was 20 mg., while in another similar fatal case the nonprotein nitrogen value was 276 mg., at which time the creatinine level was only 7.4 mg. It is our impression that in extrarenal azotemia the creatinine and nonprotein nitrogen levels do not have the grave prognostic implications comparable values would have in primary renal disease. An illustrative case is that of S. P. in the table. The nonprotein nitrogen values reached 189 and the creatinine 16.8 mg. per 100 cc. At this point, the patient manifested such uremic symptoms as stupor and twitching. Yet complete recovery was effected 12 days later. Recently a number of reports of similar cases of reversible acute renal insufficiency have appeared in the literature.[10]

As can be seen in the table and chart of the four surviving patients, the creatinine value tends to drop toward normal levels more rapidly than the nonprotein nitrogen or blood urea nitrogen. Fishberg [2] has offered a reasonable explanation for the discrepancy between nonprotein nitrogen and creatinine in certain cases of extrarenal azotemia. He suggests that this is due to

10. Peters and Van Slyke.[9] Leff, I. L.; Rosenberg, B.; Eisenmenger, W. J., and Steele, J. M.: Recovery from Uremia: A Report of 5 Cases, Am. J. M. Sc. **217**: 666 (June) 1949. Stock, R. J.: Acute Urinary Suppression: Observations in 22 Patients, Am. J. Med. **7**: 45 (July) 1949.

the fact that urea is eliminated solely by glomerular filtration while creatinine is excreted by both filtration and tubular excretion. This would indicate that, although pathologically the tubules are primarily involved, in severe extrarenal azotemia the earliest effects may be on the glomeruli. Fishberg [2] also reports that he has observed this same phenomenon of increase in urea with normal creatinine in the first stages of mechanical urinary obstruction.

SUMMARY AND CONCLUSIONS

To determine the significance of the relation of creatinine to nonprotein nitrogen, we studied 44 cases of azotemia of a wide variety in the three general categories of primary renal, extrarenal and postrenal or obstructive uropathy. No diagnostically significant correlation between creatinine and nonprotein nitrogen was found in any of the three categories. Although the creatinine level may be increased in proportion to the nonprotein nitrogen elevation in all three categories, a creatinine value disproportionately low as compared with elevation of the nonprotein nitrogen is usually indicative of extrarenal or postrenal azotemia.

Fifteenth Place and California Avenue (8).

PHYSICAL MEDICINE AND REHABILITATION STUDY

One Year Report in Particular Relation to the Chronically Ill

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Rocky Hill, Conn.

Seven hundred and ninety-seven patients were referred to the Department of Physical Medicine and Rehabilitation in its first year of operation, the first applied step in the study of rehabilitation for the chronically ill of this state. Patients were studied from July 1, 1948 to June 30, 1949 at the combined State of Connecticut Veterans' Home and Hospital and the Hospital for Chronic Illness, Rocky Hill, Conn., operated by the State Veterans' Home and Hospital Commission. The program is conducted under the auspices of the State Commission on the Care and Treatment of the Chronically Ill, Aged and Infirm, subsequent to studies which have been carried out by the State of Connecticut since 1938.[1]

PURPOSE AND ORGANIZATION OF THE STUDY

The 1947 survey revealed 15,000 chronically ill persons already under the care of one of the various state agencies. Forty per cent of these were under the age of 40; of the total, 40 per cent were bed patients. The commission wished to learn which members of this group could be made physically self sufficient or even returned to part or total economic usefulness and what plans must be made for the current and future care of the chronically ill in this state.

The state needed to know the type and extent of additional facilities necessary for the current case load and to determine what might have to be provided by the state, municipalities or private agencies. The first program was to be established in an existing facility and expanded to other municipal and private facilities as quickly as possible. Additional state construction was to be planned according to the needs demonstrated by this study.[2]

The program was started in the State Veterans Home and Hospital, where a five story unit of 328 beds and an enlarged surgical department had been completed in 1948 but had not been occupied. The older hospital unit included 284 beds, a domiciliary of 760 beds, a large auditorium, homes and dormitories for the medical, hospital and administrative staff and full maintenance shops.

Veteran residents of Connecticut who meet certain well defined admission requirements are eligible for admission to this home and hospital. They must enter through the hospital for a check-up, after which they may be discharged to the home—where they can stay indefinitely if they continue to meet the administrative rules. They may return to the hospital as outpatients for treatment of minor illnesses, and they are readmitted to the hospital as bed patients when necessary.

It was decided that the State Commission for Care of the Chronically Ill, Aged and Infirm could also admit a certain proportion of welfare patients to this hospital for medical evaluation, for any indicated medical or surgical treatment and for rehabilitation. These patients were to be nonveterans referred for care by one of the various state agencies. These patients could not be moved to the veterans' home but were to be returned to their own homes or to some convalescent or boarding home when treatment or training had been completed. The original referring agency would then resume responsibility.

Both veteran and nonveteran patients receive the same opportunity for treatment and training without any discrimination in status or segregation in the hospital. Administration is under the joint state and veterans commissions, and the combined facility is known as the Hospital for Chronic Illness. It will continue in the same facility until the entire bed capacity is needed by the veterans commission for its own patients or until the state commission builds its own facility.

The hospital serves patients with acute general medical and surgical requirements but is also able to care for those with lengthy and chronic illness. The fact that veteran patients can remain in the home and that patients receiving state aid can be kept here at no greater cost to the welfare department than that for their care in other institutions means that studies and treatment can be continued over long periods of time when necessary. This study in rehabilitation is not designed in the first instance to show the savings possible with a full program of physical medicine and rehabilitation, but it affords an opportunity to demonstrate what can be done when adequate time is available.

From the Hospital for Chronic Illness.
Chief, Physical Medicine and Rehabilitation, Hospital for Chronic Illness, Rocky Hill, Conn., and Associate Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Conn.

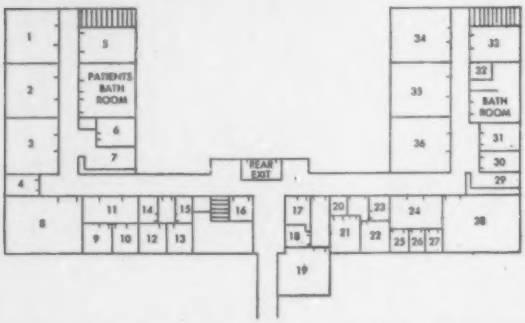
Published with permission of the Medical Director, Connecticut State Commission on the Care and Treatment of the Chronically Ill, Aged and Infirm, Dr. A. Nowell Creadick, who assumes no responsibility for conclusions drawn by the author.

1. The State Commission on the Treatment and Care of People Afflicted with Physical or Mental Disabilities, 1940. Need for a State Infirmary for the Care and Treatment of Aged, Infirm and Chronically Ill Persons, report to the General Assembly by the Public Welfare Council, State of Connecticut, 1945. Suggestions Concerning State Infirmaries for the Aged, Infirm and Chronically Ill, Connecticut Public Expenditure Council, Inc., 1944. Creadick, A. N., and Howard, J. H.: Developments in the Care of the Chronic Sick in Connecticut, Connecticut M. J. **11**: 141 (Feb.) 1947. Planning for the Chronically Ill: Joint Statement of Recommendations by American Hospital Association, American Public Welfare Association, American Public Health Association and American Medical Association, J. A. M. A. **135**: 343-347 (Oct. 11) 1947. Creadick, A. N.: State Program for Chronically Sick, Connecticut M. J. **11**: 836-837 (Oct.) 1947. A Report to the Governor and the General Assembly, Commission on the Care and Treatment of the Chronically Ill, Aged and Infirm, State of Connecticut, 1947. Digest of Connecticut Administrative Reports to the Governor, ibid., vol. 2, 1947-1948, pp. 375-380; vol. 3, 1948-1949, pp. 356-363.

2. (*a*) Wilbur, R. L., and Krusen, F. H.: Report on a Community Rehabilitation Service and Center (Functional Plan), New York, Baruch Committee on Physical Medicine, 1945. (*b*) Bennett, R. L.: Functional Testing and Training in Physical Medicine, Arch. Phys. Med. **30**: 263-271 (May) 1949.

A program of physical medicine and rehabilitation must be based on a sound medical diagnosis. Many of the patients admitted through the joint state commissions need a complete medical evaluation. It is done routinely for all patients. It includes inspection and correction of dental, visual and aural difficulties in addition to any indicated medical or surgical treatment. The psychiatric, psychosomatic and social difficulties of each patient are considered as a necessary step to understanding the patient and his problems. Attending specialist consultants were added to assist the hospital staff in this evaluation and treatment.

There were approximately 250 patients in the older hospital unit when the Department of Physical Medicine and Rehabilitation officially opened June 1, 1948. The new wards were gradually opened until all the hospital beds were filled during the winter months. The domiciliary portion also filled to capacity during the same period, but about half its occupants left during the spring and summer of 1949. The turnover in acute illness is similar to that in other hospitals for the care of patients with acute general medical and surgical problems. The acutely ill as well as the chronically ill patients are included in this study.



Floor plan of the Department of Physical Medicine and Rehabilitation, Hospital for Chronic Illness, showing location of: 1, power tools; 2, medium crafts; 3, light crafts; 4, photo laboratory; 5, print shop; 6, occupational therapy preparation room; 7, office space; 8, recreation, clinics and movies; 9 and 10, classrooms; 11, library; 12, 13 and 14, classrooms including speech therapy, vocal rehabilitation and education office; 15, occupational therapy office; 16, elevator; 17, staff dressing room; 18, elevator; 19, brace shop; 20, doctor's examining room; 21, doctor's office; 22, director of vocational education; 23, secretary's office; 24, staff room; 25, physical therapy office; 26, social service office; 27, recreation office; 28, gymnasium; 29, office space; 30, whirlpool bath; 31, Hubbard tub; 32, physical therapy class treatment; 33, peripheral vascular disease thermal control, and 34, 35 and 36, physical therapy treatments. The scale is 1/32 inch to 1 foot. There are approximately 10,000 square feet of work space, exclusive of corridors.

FACILITIES OF THE DEPARTMENT

The Department of Physical Medicine and Rehabilitation was assigned the entire first floor of the new unit—which had previously been designed for two bed and six bed wards totaling 64 beds—with two utility rooms and one day room on each wing, and one kitchen for the floor. The total bed capacity then became 584. Sixty-four of these beds are designated for ambulatory patients in the Department of Physical Medicine and Rehabilitation. Patients are transferred to these wards as a reward or for motivation, but they remain under the care of a ward physician. They have their own self governing organization. (The nursing staff is still too limited to place bed patients with special physical rehabilitation problems on these wards.) The first floor contains approximately 10,000 square feet of working space, exclusive of corridors. The entire space has been utilized, as is shown in the accompanying illustration.

One wing is assigned particularly to physical therapy; the other to occupational therapy, educational classes and prevocational testing and training. The day room on the physical therapy side is converted into a gymnasium; the other day room is used for clinics, variously scheduled meetings, recreation and as an overflow gymnasium or for occupational therapy. Two of the six bed wards on each wing are converted into offices and class rooms by the use of steel and glass removable partitions.

The physiatrist, who is chief of Physical Medicine and Rehabilitation, has an office with an adjoining examining room. There are smaller offices for the section supervisors and one for use of the counsellor from the State Department of Education, Division of Vocational Rehabilitation. Since all department records are kept in the staff room, the physical and occupational therapists do their charting together at a regularly scheduled hour every day. This further coordinates the work of the two sections and increases each therapist's understanding of the work of the other section. The physiatrist can easily hold joint staff meetings whenever indicated while the group is already regularly assembled.

Class rooms are used by the occupational therapists for handwriting classes; by the speech therapists for speech therapy, for lip reading and for making audiograms, and by the commercial instructor for typing and other commercial courses. The psychiatrists occasionally use a room for group work, as does the mental hygienist employed and assigned full time by the State Commission on Alcoholism (which is also conducting a study in the hospital).

The other wards have become treatment rooms. The entire department is equipped as completely as possible with every type of modern physical and occupational therapy equipment necessary for well rounded treatment as well as for teaching purposes. Two utility rooms are the occupational therapy preparation room and a photography laboratory and dark room; two rooms in the physical therapy wing contain the Hubbard tank and whirlpools. The bathrooms on either side are large, with the toilet facilities separated from the lavatories, showers and tub by a solid partition with an adjoining inner door. The bathtub on the physical therapy side is used for full tub hydrogalvanic baths. The patients are taught to wash their elastic bandages and the amputees their stump socks in the lavatories of that room. The occupational therapists teach shaving and shoe shining in the other lavatory. Self care toilet activities are taught in the two bathrooms by the male therapists, assisted by the department orderlies. The kitchen was turned into a brace and prosthetic shop where all adjustments, or even assembly, of braces or prostheses can be made.

Hospital patients are referred to the physiatrist by the ward or attending physicians. The ward physicians rotate sick call in the outpatient clinic held for the domiciliary members and refer patients from there. Special consultation forms have been provided for all department referrals. Every referred patient is assigned a physical medicine and rehabilitation department number in sequence as he is referred, and he maintains that number if he is readmitted to the department. A special symbol is added for each readmission. This numerical system makes it possible to know the total number of patients admitted to the department or the number of readmissions of any patient at a given time. It serves as an accurate statistical record which is always current.

The physiatrist assumes the full responsibility for writing prescriptions for all tests and treatment given in the Department of Physical Medicine and Rehabilitation. The hospital chart is reviewed. The physician examines the patient in the department whenever possible, on the ward when necessary. Examination in the department is preferred because gym trunks are provided. When the patient is dressed in these, the over-all body mechanics, posture, stance and gait can be more readily evaluated in terms of the whole man in addition to the specific physical complaint for which the patient has been referred. New patients can also be tested immediately for standing or walking in the parallel bars. All patients are questioned about previous occupations, work record and education in addition to the physical history. The social history is noted. The physical and occupational therapy supervisors are present at the time of the initial evaluation.

Many patients are referred originally for tests to assist in completing the diagnosis as well as for any treatment the physiatrist considers to be indicated. Other patients are referred as psychoneurotics. Many of these, as well as others without physical complaints, may be referred particularly for a prevocational evaluation or for possible reemployment through the State Department of Education, Division of Vocational Rehabilitation. The physiatrist most often additionally prescribes physical relaxation, heavy exercise or work therapy—or relaxing, stimulating or projective [3] occupational therapy for the psychoneurotic patients—as seems indicated by the psychiatrist's report. (Psychotic patients are transferred to other state or Veterans Administration neuropsychiatric hospitals.)

On June 30, 1949 the department staff included 10 physical therapists, 1 physical therapy technician, 7 occupational therapists, a part time speech therapist and a part time teacher of typing and other commercial subjects, 1 file clerk, 1 typist and 1 stenographer. The therapists are all graduates of schools approved by the American Medical Association.

TESTS AND TREATMENT

Therapists spend approximately one third of their time in making tests—particularly those which assist the physicians to confirm either a diagnosis or a prognosis. Manual muscle tests are routine when a patient has any muscle weakness irrespective of the cause. Electrical muscle tests are done to assist in confirming a neurological involvement and the degree of the reaction to degeneration. Range of motion is measured with a goniometer when there is any limitation of joint motion. Posture evaluation is recorded; hamstring shortening or expansion is measured on all patients referred for treatment of various respiratory difficulties. Oscillometric readings, skin temperatures and Gibbon and Landis tests are routine for any previously diagnosed or suspected peripheral vascular disease. When the neurosurgeon decides that a test sympathetic block is indicated, the anesthetist performs this procedure in the thermally controlled room in the department. A therapist does the appropriate tests before, during and after the block. All this group of tests are done by the physical therapists. The occupational therapists fill out an avocational questionnaire on every patient and do the first test in "Activities of Daily Living."

The special tests for "Activities of Daily Living" is routine for every patient with any disability. The patient is tested to see whether he is able to turn over in bed, handle all articles about his bed, handle all other common utilities, dress, feed and shave himself, get from the bed to either a sitting or standing position, and return. He is tested to see whether he can walk on level ground (and for what distances), climb curbs and ramps and finally climb stairs of various tread heights (with and without hand rails); also tested is his ability to get into automobiles and onto buses or other public conveyances and to cross streets with traffic lights. When canes, crutches, braces, prostheses or any other appliances are needed, he is instructed in their application and use and is graded accordingly. He is graded for what he can do initially and is then put in special training classes to become more proficient in the performance of these activities or to learn to do the things he is unable to do. Training in each activity continues and is graded separately until it appears that the maximum results have been obtained and that the patient is as physically independent as is possible within the limits of his physical and mental capacities. All grades are recorded on the patient's individual chart of activities of daily living.

This is functional treatment and training and it is done by both physical and occupational therapists. The occupational therapists conduct handwriting classes for all persons who need to relearn or improve their writing or to change their handedness. Occupational therapists also have shaving classes and teach all other activities that particularly relate to the use of the hands. The physical therapists assume the responsibility for the training in bed activities, sitting, standing, walking and traveling. This part of the program consumes about one third of the therapists' time and one third of the patients' total department prescription. Seldom is it sufficient for the total treatment of a patient, since definitive physical medicine procedures usually facilitate the functional recovery.[2b]

Definitive Treatment.—Definitive treatment in physical therapy includes specific muscle reeducation and therapeutic exercises (passive, active, active assistive and resistive) assisted by massage and various applications of heat, cold, light, water and electricity. Definitive treatment in occupational therapy uses projects for: increase of muscle strength, coordination or range of joint motion; prevocational testing, reconditioning, prevention of deconditioning and development of work tolerance; relaxation, stimulation or socialization, and creative art work—which may be of diagnostic assistance to the psychiatrist or may in itself be psychotherapy.[4]

Here as in any other well equipped Department of Physical Medicine there are at least 140 treatment possibilities in physical therapy, either as a single treatment or in combination. A similar number of treatment possibilities is available in occupational therapy—particularly since the physiatrist writes prescriptions according to the Licht nomenclature.[5] (The variety of treatment possibilities indicates the reason why physical medicine can serve all other fields of medicine and surgery.)

3. Projective occupational therapy employs those arts which are unhampered by established technics and which allow for freedom of expression (such as finger or any other painting, clay or plasticene® modeling). It may include those arts with which the patient has no previous experience or preconceived ideas of technics.

4. Hall, V. R.: Psychological Implications of Physical Medicine, Occup. Therapy **28**: 21-30 (Feb.) 1949. Harris, R. L.; Buvens, A. E., and Irwin, I.: Ceramics as Occupational Therapy for Patients with Suicidal Tendencies, ibid. **28**: 231-244 (June) 1949.

5. Licht, S.: The Objectives of Occupational Therapy, Occup. Therapy **26**: 17-22 (Feb.) 1947.

Just as specific definitive treatment usually is prescribed to facilitate functional training for patients with chronic disabilities, capabilities of patients recovering from acute illness or injury are checked and functional training is instituted whenever indicated. For instance, treatment to regain motion in a leg after a hip fracture would be of little value if the patient were not taught to walk and climb stairs.

Definitive treatments prescribed for chronic disability are varied and may include one or several specific treatment combinations in accordance with the underlying pathologic, physiologic and anatomic conditions and the results of the diagnostic tests made in the department. Usually some form of both physical and occupational therapy is prescribed.

Much definitive treatment must be given individually, but definitive and functional treatment is done in groups whenever possible. Patients are grouped according to disabilities. Stimulation, motivation, learning by observation and even competition often speed accomplishment. Patients with cardiac diseases are often grouped for graded exercises, as are patients with asthma or those with various other conditions who need to be taught physical relaxation. Patients with arthritis have a daily group exercise class, irrespective of any other individual prescription. In such classes individual patients are encouraged to take turns in giving the exercise commands for the group while the therapist goes from patient to patient, giving individual supervision. The hemiplegia classes are conducted similarly, and the patients enjoy mat and wand drills or reciprocal motion exercises done to music in this fashion. The patients enjoy their fellow patient's instructions—sometimes laughing heartily at or with the instructor—and work with more individual concentration, pending the time when it will be their turn to instruct.

Functional Activities.—Functional activities are taught in similar groups: Class A includes all activities in bed, getting from the bed to a chair or to a standing position and all the hand activities. Class B includes all activities that have to do with the accomplishment of independent walking on level ground. Class C includes all "climbing" activities and the final training in traveling outside the hospital. Patients are divided by disabilities into three main groups, and the classes are subdivided accordingly. The hemiplegic patients work together; those with other neurological disabilities form a second large group, and the amputees are the third group, subdivided into units for preprosthetic and postprosthetic training.

One occupational therapist and one physical therapist work together in the class A activities, giving an hour daily to each disability group. This is done in one large treatment room containing eight beds. The occupational therapist has an additional class each day for more practice in hand activities. This class is continued until hand training is completed, even though the patient is walking. Class B and class C work is conducted by the physical therapists in the gymnasium, in the halls and on the stairways. Patients usually respond better to the group work and are more interested. In addition, a staff of limited size can handle more patients with efficiency.

The speech therapist has individual and group therapy for the aphasics, the stutterers and the stammerers. The aphasics constitute the largest group and average 15 to 20 at all times. Every gain in vocabulary is most gratifying to the patients, because the sense of frustration of these persons is severe, no matter how much physical restoration is accomplished. The handwriting classes are often adjunctive to speech therapy. Esophageal speech is being taught by an occupational therapist instead of by the speech therapist—for the only reason that the occupational therapist has had special training in that procedure.

The speech therapist also has had some training with the deaf and hard of hearing; she is doing routine testing and is teaching some lip reading under the supervision and prescription of the ear, nose and throat specialist who is the director of the aural rehabilitation program. This program was just getting started at the end of the first year. In order to determine the case load and treatment needs in aural rehabilitation in this hospital, it was decided that every patient referred to the Department of Physical Medicine and Rehabilitation automatically would have a hearing evaluation. Audiosweeps are now done on each patient. When a hearing loss is indicated an audiogram is done. The staff of the ear, nose and throat service examines each of these patients, treats them and orders sinus roentgenograms, if indicated. Hearing aids and training in their use will be added as quickly as possible. Addition of a soundproof room and other necessary equipment is contemplated. More personnel will be necessary later. The present speech therapist will soon be employed full time.

Educational Program.—To date the business courses are the principal part of the anticipated educational program. This educational therapy mainly is prevocational testing and training. Unless a patient is being kept in condition to return to an office position, the majority of the patients will have to complete their training in business schools. A few patients have been taught one-handed typing; one of these is a 55 year old hemiplegic who is now attending a business college under the auspices of state vocational rehabilitation. Two severely paralyzed patients now have a means of communication—as well as therapeutic exercise—by having been taught to use special machines, one a remote control typewriter and the other an electric typewriter. A third patient is just starting such training. So many patients need or want this type of educational training that the instructor will soon be employed full time.

A more complete educational program is contemplated but cannot be developed until a full time director of educational and prevocational training can be added to the staff. Courses for high school equivalency diplomas are contemplated.[6] The present photography and print shops, now under occupational therapy supervision, will be expanded; the maintenance shops on the grounds can probably be utilized more fully.[7] One patient is now in charge of the photography shop and assists an occupational therapist to make movie and still pictures of the patients and of department activities. A hospital newspaper is reported, written, mimeographed, assembled and distributed entirely by the patients. The patients cut stencils for the paper and for any other material that is mimeographed in the department. A hand printing press is being assembled; a multigraph duplicator is being renovated.

Recreation.—There is, as yet, no recreation director. The physical therapists, and particularly the occupational therapists, have combined as much of a recrea-

6. General Educational Development Tests: High School Level, in Medical Rehabilitation Programs, VA Hospitals, Veterans Admin. Techn. Bull., TB 10A-20 (Feb. 15) 1947.
7. Prescription for Work, United States Veterans Administration, Department of Physical Medicine, Medical Rehabilitation Service, 1946.

tion program as is possible with their other duties. As a temporary solution one afternoon a week is set aside for recreation instead of regularly scheduled treatments. Usually the occupational therapists are responsible for this program while the majority of the physical therapists are doing diagnostic tests. Indoor games and contests are conducted in the day room. In good weather croquet, volley ball, horseshoes and shuffle board are played outdoors. Three outside doors open on an area where these activities are easily accessible.

There are occasional evening parties in the day room on the rehabilitation wards. Patients on those wards are hosts to the nurses, the therapists and other hospital patients who are active in the Department of Physical Medicine and Rehabilitation. Dancing is the main entertainment. Music is furnished by a (volunteer) professional dance orchestra. The patients have their own committees to plan other entertainment, decorations and refreshments. The physical medicine and rehabilitation staff members sponsor and supervise the party.

A softball diamond was completed during the summer of 1949. Hospital and domiciliary patients are eligible both to play and to be spectators. Although the softball playing was managed from the veterans home and was not part of the Department of Physical Medicine and Rehabilitation, it was of great value to many patients in that department.

DISEASE OR DISABILITY CLASSIFICATION

Table 1 attempts to classify the 797 referred patients according to their disease or disability. The patients referred in the first year are shown in the admission column; those remaining under treatment at the start of the second year appear in the next column. They have been grouped and tabulated by specialties as far as is possible. It is obvious that those disabilities or diseases marked with asterisks, or totalled separately, might fall into any of the larger specialty groups, depending on the diagnosis and indicated treatment for each patient. The classification is an arbitrary one for department convenience in particular relation to disability and treatment. A patient with more than one of the diseases or disabilities included in this classification was scored for each. The additional scoring totaled 910 disabilities or diseases among the 797 patients referred: for example, several unilateral amputees had peripheral vascular disease in the remaining leg; two amputees had residuals from cerebral vascular accidents, as had some of the cardiac patients and one patient with epilepsy; some psychiatric patients had various physical disabilities. Three hundred and thirteen of the total referred patients had disabilities which made them totally or partially incapable of self care; they were referred for this training. The cause and duration of each of these conditions as well as the additional diagnoses or pathological conditions—such as diabetes, hypertension, cardiac disease, gastric ulcers or hernias—were noted by the physiatrist. That information was recorded on the individual department charts and on prescriptions written by the physiatrist for the staff of the Department of Physical Medicine and Rehabilitation.

These referrals confirm the fact that a department of Physical Medicine and Rehabilitation serves every other field of medicine and surgery. Such a department is no more a subdivision of orthopedics or of neurology than it is of psychiatry, general medicine or general surgery. It parallels all. Referrals from general surgery—particularly abdominal surgery—are lowest in this group for only one reason, a shortage of therapy staff. A choice of treatment by disabilities had to be made because of the large number of referrals. The chief of surgery and the chief of physical medicine and rehabilitation are in agreement on the importance and need for this treatment, and it is a standing referral request, pending the time when more therapists are available. When that treatment can be given here routinely, approximately one fourth of the total referrals will probably be from the general surgical service, considering how much surgical treatment for acute condi-

TABLE 1.—*Classification of Patients Referred to Department of Physical Medicine and Rehabilitation*

Disabilities or Disease Syndromes Referred for Treatment 6/1/48 to 7/1/49	Admissions 6/1/48 to 7/1/49	Patients Still Under Treatment at Start of Second Year	Total Disabilities, Divided by Specialties, When Possible		
Hemiplegia*	77	18	77		77
Multiple sclerosis	22	13			
Spinal cord injury	6	3			
Parkinson's disease	18	2			
Amyotrophic lateral sclerosis	9	2			
Spinal cord disease including platybasia	9	6	All other neurological	Total neurological	209
Progressive muscular atrophy and dystrophy	3	1			
Jamaica ginger paralysis	2	0			
Tabes	6	2	132		
Brain injury	9	2			
Postmeningitic syndrome	3	3			
Poliomyelitis	2	2			
Guillain Barré syndrome	2	0			
Epilepsy	7	1			
Peripheral nerve injury	20	4			
Cerebral palsy	2	0			
All other neurological	13	5			
Arthritis*	82	16	82		
Orthopedic (general)	116	26	General ortho.	Ortho.	236
Feet	25	5			
Dupuytren's contracture	3	1	144		
Shoulders* (Orthopedic and neurological)	37	3	Ortho. or neuro. or both 99		99
Back* (Orthopedic and neurological)	58	9			
Intervertebral disk	4	0			
Amputation*	49	25	49		49
Peripheral vascular disease*	57	26	57		57
Medical (general)	26	2			
Cardiac disease	17	4	General med'cal	General medical	233
Tuberculosis	48	14	120		
Asthma, bronchitis etc.	14	2			
Streptomycin vertigo	5	1			
Dermatologic*	21	5	21		233
Psychiatric*	92	6	92		
Surgical (general)	19	7	General surgery		
Chest surgery, tuberculous and nontuberculous	3	2			
Esophageal speech	3	1	25		25
Blind*	6	0	6		6
Deaf*	6	5	6		6
Total disabilities	910	212			
Total patients referred	797				

* Those disabilities or diseases marked with asterisks or totalled separately might fall into any of the larger specialty groups, depending on the diagnosis and indicated treatment for each patient.

tions is being constantly done in this hospital. I have previously stressed the importance of such treatment [8] and continue to be of the same opinion.

This classification clearly indicates that patients cannot be separated by specialties if they are to be rehabilitated. Other classifications would no doubt give the same indications. Disability becomes the common denominator. It is the basic concept of physical rehabilitation and total rehabilitation that a patient must learn to live with, and not for, his disability if he is again to become a well adjusted person to any partial or total degree; medical responsibility for each patient is not over when the definitive medical and surgical treatment is complete and the acute phase of an illness has been

8. Covalt, N. K.: Bed Exercises, Arch. Phys. Med. **28**: 18-29 (Jan.) 1947; Early Exercise for the Convalescent Patient: Modern Program of Bed Exercise Prevents Deformities Due to Illness or Injury, Improves Morale, and Hastens Recovery, Am. J. Nursing **47**: 544-546 (Aug.) 1947.

passed. One must consider the total man and his psychiatric, social and economic adjustment as well as his physical readjustment or retraining.[9]

These patients were referred for preventative treatment, for diagnostic and prognostic tests and for definitive and functional treatment. Treatment was given during acute illness, in the convalescent period and in chronic illness or that in which the residual chronic disability had oftentimes persisted for many months or years. Preventative medicine included such procedures as correct bed positioning to prevent deformities in the early stage of acute illness and early training in self care to prevent physical helplessness after an acute illness—particularly an illness which of itself might be considered to be chronic or progressive. It is apparent that there is no disease or disability that cannot benefit during some phase by some form of physical medicine.

TREATMENT AND RESULTS

Of the 797 referred patients, 27 did not need treatment, 313 (including 64 belonging to the group of chronically ill, aged or infirm) needed functional training, 434 needed definitive treatment only and 23 required only vocational placement. There were many patients among the veteran group already in the hospital when the program started who needed functional training—including 41 hemiplegics and 17 amputees, not one of whom could walk. Many patients among both the chronically ill and the veteran groups had been physically dependent for two to five years and longer. The State Commission admitted a total of 129 patients in the first year. All of these were evaluated by the Physical Medicine and Rehabilitation Department.

During the first year 23 patients had acute disabilities after orthopedic procedures. In the remaining 299 patients of the 313 requiring functional training the disabilities were of relatively long duration with the exception of a few recent cerebral vascular accidents and a few recent amputations. Of the entire 313, some were bed patients and others were confined to wheelchairs. Many were unable to feed, dress and bathe themselves or to handle any other ordinary utilities. The few who could walk were insecure or unable to take more than a few steps on level ground, even with crutches or canes. Activities of Daily Living tests were made on these patients immediately after referral, and functional training was instituted. This was started at the bedside, if necessary.

Fifty-two patients with disabilities absolutely refused treatment; some refused to even try the Activities of Daily Living test. The first several refusals were not accepted. Repeated attempts were made to motivate each patient, and the physiatrist insisted that repeated attempts be made up to a minimum of three months' trial—unless it became absolutely obvious before that time that nothing could be done. The psychiatrist interviewed each of these persons, as they have attempted to interview all other patients. Psychotherapy was attempted whenever feasible. The referring physician and the nursing staff added their encouragement. Some patients in this group signed themselves out of the hospital shortly after admission. Many of the 52 were in the younger age group.

Eight other patients referred for evaluation were too senile or deteriorated to receive any treatment. In 23 others treatment was discontinued after a minimum trial treatment of no less than three months; for the majority treatment was continued six to 10 months. Two patients voluntarily requested resumption of treatment. The remainder are almost all in the hospital. About every three months the ward physician requests that the department try again to teach them self care activities. This is always done—so far without results.

The group of 23 patients represents the only complete failures among 253 patients who have actually had training in functional self care. The majority of these have learned to walk, climb stairs and travel outside the hospital. A small percentage will always be wheelchair patients and are considered to have reached their maximum goal in physical rehabilitation. Eighty-one of the group were still under training at the start of the second year, but complete physical independence was considered to be possible for all of them.

LENGTH OF TREATMENT PERIOD

There has been an opportunity to spend unlimited time on many of these patients, and that time has been invaluable. As an example, 49 amputees were referred to the department, including the 17 who were here when the program started. (One of the 17 died shortly after the department opened.) Thirty-three patients have been fitted with prostheses. Except for two, to my knowledge all are (or should be) walking today. One amputee, aged 46, had to be transferred to a psychiatric hospital eleven months after the department opened; the second, fully trained, died of a coronary attack two months after discharge. He had no evidence of any cardiac disease while in the hospital. Necessary (and frequent) changes in the prostheses, particularly the sockets in relation to stump shrinkage, were made in the prosthetic shop so that patients were discharged from the department with well fitting prostheses, with a knowledge that changes could still occur and with arrangements made for further revisions or changes. It took six to nine months to train some of these persons. Most of these, as well as the 15 who did not receive prostheses, had three months' preliminary training. Three of the 15 were mentally incapacitated; the other 12 lacked the motivation, and particularly the motor skills, necessary to use a prosthesis. This latter group, almost without exception, were made physically independent either in wheelchairs (if bilateral amputees) or by the use of crutches. The majority of all the amputees were over 60 years of age.

Braces were furnished to 45 patients, the majority of these with residuals of a hemiplegia. Of 77 such patients admitted, the majority are now walking. Approximately 50 per cent of patients with this disability required braces.

It has been learned that one should not make a final evaluation of a patient's status and decide that physical rehabilitation is impossible until he has been offered a minimum of three months' training. Judgments made at the time of the first examination or in the first week must often be changed. It may take three months to motivate a patient, to overcome his "mental atrophy of disuse," [10] or to differentiate between mental disuse atrophy and mental deterioration. He must be convinced that it is worth while to make the effort. Fear must be overcome. Fear of the patient may be due to

9. Rusk, H. A.: The Broadening Horizons of Rehabilitation and Physical Medicine, Arch. Phys. Med. 30: 26-28 (Jan.) 1949; Dynamic Therapeutics in Chronic Disease, Postgrad. Med. 5: 278-287 (April) 1949.

10. Mental atrophy or disuse occurs when a patient has had no mental stimulation or has made no effort to concentrate or to think but has been content to placidly vegetate.

previous warnings concerning the danger of any physical activity or may relate to the security and the attention he will receive if he remains in bed. Helplessness can often be for secondary gains (the advantage the patient derives from his illness).[11] Psychiatric evaluation and guidance is most helpful during this period. It is often equally necessary for the occasional patient who starts retraining with enthusiasm and quickly reaches a plateau without having attained the maximum accomplishments which appear physically possible.

A clearcut statistical report of discharges cannot be made for many reasons. Many veteran patients continue to live in the hospital or domiciliary because they have no other home. Some of these with disabilities, who have become capable of all the activities of daily living, are continued on partial treatment or are rechecked in the Department of Physical Medicine and Rehabilitation to prevent physical deconditioning and to maintain interest (particularly in occupational therapy).

STATUS OF PATIENTS AT START OF SECOND YEAR

Of the 797 patients referred, 244 remained under treatment at the start of the second year, including the 81 with disabilities. Some of the 244 represent readmissions, particularly among the veterans—since some reasons for readmissions are peculiar to this institution. Veteran patients are discharged from the home and hospital for infringement of administrative rules. Usually, they can be reinstated within 60 to 90 days. Many veterans leave against medical advice; others in the home just leave—usually to try to be employed. If a job is not available they often return because legally this can be their home.

TABLE 2.—*Partial Recapitulation of Discharges*

Evaluation, no treatment indicated	27
Physical rehabilitation considered possible, treatment refused	52
Treatment discontinued for other reasons, usually medical complications	69
Trial treatment, physical rehabilitation, failed (three of group died)	23
Total deaths after treatment discontinued	24
Transferred to other hospitals (usually tuberculosis sanatoriums or psychiatric hospitals)	24
Discharged without informing the Department of Physical Medicine and Rehabilitation:	
Improved or (possibly) maximum results obtained	162
Unimproved or treatment incomplete	134

In the early months of the program some patients were discharged by the ward physicians before treatment in the Department of Physical Medicine and Rehabilitation was complete because those physicians, like many others, were accustomed to discharge all patients as soon as definitive medical or surgical care was complete.[12] These physicians had to become conscious of total care—including physical rehabilitation—with total rehabilitation as the ultimate goal. This was more often true of patients requiring definitive physical medicine than of patients requiring physical rehabilitation.

A maximum of 172 patients representing 216 disabilities in my opinion have achieved the maximum of self care. There were failures with 23 patients, approximately 15.5 per cent of the 290 with chronic disabilities; there were 43 per cent failures if the 52 patients who refused treatment are also taken into consideration. There were no failures among the persons with acute disabilities, which included those with early cerebral vascular accidents and amputations in addition to the 23 patients with orthopedic disabilities (table 2).

11. Alexander, F.: Fundamentals of Psychoanalysis, New York, W. W. Norton & Company, Inc., 1948, p. 212.

12. This is a rather common situation that physiatrists are facing in almost every Department of Physical Medicine and Rehabilitation.

SUMMARY

I have given a general outline of the purpose and organization, personnel and physical facilities of a Department of Physical Medicine and Rehabilitation which has been established as part of a study concerning treatment of the chronically ill in the state of Connecticut. The types of patients referred to the department are discussed in general.

The 797 referred patients have been classified as far as is possible by disabilities, which appear to be the common denominator in planning a program of physical and total rehabilitation. A total program considers the physical, psychological, social and economic adjustments of each person in order to utilize his remaining capabilities to the greatest extent, regardless of a residual physical disability.

It would appear from this report that definitive and functional physical medicine are needed concomitantly and that such treatment, planned or started at the onset of an acute illness, can prevent the development of chronic disabilities which lead to helplessness in the vast majority of cases. It is an excellent form of preventative medicine. The association of patients with acute illness which could result in disabilities and patients with chronic illness has served as a motivating factor for those in each group.

In this study the number of chronic invalids who failed to accomplish any part of functional self care activities is approximately 15 per cent. The majority have all learned to walk with at least a fair degree of proficiency. Age has not been a determining factor. Adequate time for training has been important. A minimum of three months has been considered most necessary. Physical rehabilitation would have been impossible for many persons if all efforts to aid them had been discontinued before the end of this time. Six months to a year (or more) has been taken to complete training for some of these patients. The psychological factor, particularly relating to fear, secondary gains or motivation, has to be especially evaluated during the early period of rehabilitation. The time that should be spent on each patient in relation to the law of diminishing returns can only be evaluated after much more study. Since adequate time and hospital facilities have been available, my associates and I are impressed with the total number of patients with long-standing disabilities who can again be made physically independent. The lack of future economic productivity of some of these persons must be balanced against the time that others formerly consumed in their care.

A department of physical medicine and rehabilitation can offer service to every other field of medicine and surgery. There appears to be no disease or injury at some stage of which the patient cannot benefit by treatment in such a department. The many facets and ramifications of such a department make it the coordinating center for the entire program of rehabilitation, but every member of the medical staff and all ancillary services—both inside and outside the hospital—must be part of the team. A sound medical diagnosis and treatment is the foundation of any part of rehabilitation, but it is the whole patient and not his disease which is to be rehabilitated.

Special Article

LICENSURE REQUIREMENTS FOR THE PRACTICE OF PATHOLOGY

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Chicago

In considering the legal requirements of the practice of pathology, two questions naturally arise. First, does a person who carries out the activities of a pathologist really practice medicine? Second, if he does, does he do it in such a way that he brings himself within the purview of the medical practice act of his state so that he must be licensed to practice medicine?

What is pathology and what does a pathologist do? Most dictionary definitions of pathology define it as a branch of medicine which treats of the structural and functional changes caused by diseases. In states having basic science acts, pathology is named as one of the basic sciences along with bacteriology, anatomy and chemistry. None of the last-mentioned sciences, however, are defined as being branches of medicine. They are all defined as sciences, i. e., the science which treats of bacteria, the science of the structure of the body, and the science which treats of the elements and atomic relations of matter. Why this difference? There are, it seems to me, two meanings of pathology just as there are two generally accepted meanings of the term practice of medicine. In its narrow sense, medicine, or the practice of medicine, is the art or science of healing diseases by the administration of internal remedies. In its broader sense, the practice of medicine means the whole field of curing diseases and includes the use of drugs or surgery or any other means which might be necessary. So it is with pathology. In a narrow sense pathology has a purely academic meaning. It is just one of the subjects taught to medical students, just one of the basic sciences. In this sense it is certainly not the practice of medicine. In its broader meaning it is the practical application of a science in such a way that physicians and surgeons are enabled more adequately to determine on the course of treatment they will follow with regard to a particular patient. Even in this broader sense, however, there are two separate and distinct types of activity engaged in by the pathologist. Suppose, for example, that all a pathologist does in a particular case is report a blood count. This is merely a mechanical procedure which a technician can do with proper training. No professional decision or opinion is given. I do not feel that such an act is the practice of medicine, but it is one phase of the practice of pathology. Suppose, however, that the pathologist not only reports the blood count but states that in his opinion, based on an examination of the blood and an examination of a frozen section of tissue from the spleen, a particular person is suffering from leukemia. Such conduct would obviously seem to constitute the practice of medicine. What is the difference? In the latter case the pathologist not only performed a pathological technic, he used the knowledge gained from study and experience to furnish an opinion, a diagnosis if you please, concerning a particular patient and such diagnosis formed the basis for medical treatment. I therefore believe that the practice of pathology is the practice of medicine when pathology is defined in its broader sense and when the acts of the pathologist consist of the rendering of an opinion or diagnosis based on study and experience at the request of a physician or surgeon and with reference to the treatment of a particular person. The crux of the situation is the diagnosis. It is the diagnosis which lifts the pathologist out of the classification of a highly trained and competent laboratory worker and places him in the field of the medical practitioner. It is the diagnosis, made at the request of the physician in charge of a case, which imparts to the pathologist a share of the physician-patient relationship in the same way that a fellow surgeon or internist or radiologist might be called on for assistance. That the practice of pathology in this way is the practice of medicine is not my personal opinion alone. It is also the opinion of the House of Delegates of the American Medical Association and has been since as long ago as 1943.

Now, bearing in mind that when a pathologist diagnoses he practices medicine, do the medical practice acts require licensure of one who diagnoses disease? Each medical practice act contains some phraseology which indicates the conduct which is included as the practice of medicine in that state. In Louisiana and Oregon there can be no doubt but that a pathologist must obtain a license to practice medicine. In Louisiana the definition of the practice of medicine includes the examining of a "person or material from such person" for the purpose of diagnosing, treating and curing. In Oregon the word diagnose is defined to mean "to examine another person in any manner," and it is further provided that "it shall not be necessary that the examination be made in the presence of such other person, it may be made on information supplied either directly or indirectly by such other person." Twenty-two other states (Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Kentucky, Maine, Michigan, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Utah and Virginia) and the District of Columbia include the word diagnosis, prognosis or examination within their definitions of the practice of medicine. Thus a pathologist who does diagnose must be licensed in those states. In Arkansas, Massachusetts, Nebraska, Nevada and Tennessee the medical practice act makes it unlawful to practice medicine or any of its branches without a license to practice medicine. If one accepts the definition of pathology as a branch of medicine, then pathologists must also be licensed in these five states. Thus there are 29 states in which, I believe, a pathologist practicing pathology in the broad sense and as an aid to medical treatment must be licensed to practice medicine.

This leaves 19 states in which the medical practice acts do not use the word diagnose or examine, or any similar expression in their definition of the practice of medicine. Of these 19 states, however, 17 (Indiana, Iowa, Kansas, Maryland, Minnesota, Montana, Missouri, New Hampshire, North Dakota, Oklahoma, South Dakota, Texas, Vermont, Washington, West Virginia, Wisconsin and Wyoming) contain provisions requiring the licensure of persons who hold themselves out or publicly profess to be physicians or who advertise that they are authorized to practice or who call themselves M.D.'s. Thus if a pathologist signs himself M.D. or Doctor and carries a listing in the classified directory under Physicians and Surgeons and lets himself be publicly referred to as a physician, I think he must be licensed in those states. I do not mean to imply, however, that if he in no way holds himself out as a

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practitioner of medicine he therefore need not be licensed merely because the medical practice act omits the word diagnosis from its definition of what constitutes medical practice. In most cases, such definitions were formulated many years ago and were merely intended as a general description of the usual scope of activity of a doctor. No need for a detailed and precise definition existed. When such definitions are subjected to judicial scrutiny, the omission of the word diagnosis is not necessarily important. In Iowa,[1] for example, one of the 17 states just mentioned, the Supreme Court has said that manifestly the first duty of a physician to his patient is to diagnose his ailment and that one who publicly professes to be able to diagnose human ailments and to prescribe treatment therefor is engaged in the practice of medicine within the meaning of the law. And in Minnesota,[2] another of the 17 states, the Supreme Court said that the science of diagnosing human diseases and ailments has come to be a distinct branch of the medical profession. The diagnostician limits his efforts to the discovery of the disease or ailment, leaving treatment to some other physician or surgeon. A physician who thus applies his learning and energies in the diagnosis of disease, the Minnesota court concluded, is engaged in the practice of medicine even though he prescribes no drugs and administers no specific treatment. Supreme Court decisions in Indiana,[3] Kansas,[4] Missouri [5] and Tennessee [6] also emphasize diagnosis and examination as being integral parts of the practice of medicine.

This leaves two states (Alabama and Mississippi). In these two states the medical practice act does not specifically require licensure of those who merely hold themselves out as practitioners. It does not specifically require licensure for practicing any branches of medicine in addition to medicine itself, as do medical practice acts of Massachusetts, Nebraska and of the other states. It does not use the word diagnose. A practitioner is defined as one who prescribes for treatment or who treats or offers to treat. Here also, however, one must not jump to the conclusion that a pathologist need not be licensed. The definition is still subject to judicial interpretation, and the courts of both of these states have, in fact, already considered the problem. The Supreme Court of Alabama [7] has said that, in common parlance, treatment is the broad term covering all the steps taken to effect a cure of the injury or disease. It includes examination and diagnosis as well as the application of remedies. The Supreme Court of Mississippi [8] has held that a person who looks at people and tells them their physical ailments and prescribes or sells medicines on such diagnosis is engaged in the practice of medicine regardless of the source from which he claims the power to diagnose.

To recapitulate, the definitions of the practice of medicine found in the medical practice acts of 29 states are sufficient, in and of themselves, to require the practicing pathologist to obtain a license from the medical examining board. In the other 19 states, although an apparent doubt might exist concerning the need for licensure because of the absence of a sufficiently detailed statutory definition of medical practice, such doubt may be removed by a judicial decision construing the existing definition. In the eight states in which such decisions already exist, it is clear that diagnosis is an essential element of medical practice and that practicing pathologists must be licensed. In my opinion these decisions are well reasoned, and I have little doubt but that they will be followed in the other 11 states when the question is raised.

1. State v. Hughey, 226 N.W. 371.
2. State v. Ralph, 167 N.W. 553.
3. Fowler v. Norways Sanitorium, 42 N.E. (2d) 415.
4. Underwood v. Scott, 23 P 942.
5. Hughes v. State Board of Health, 159 S.W. (2d) 277.
6. O'Neil v. State, 90 S.W. 627.
7. Hester v. Ford, 130 So. 203.
8. Redmond v. State, 118 So. 360.

Clinical Notes, Suggestions and New Instruments

PHLEGMASIA CERULEA DOLENS

Massive Venous Thrombosis in an Extremity Associated with Shock

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Phlegmasia cerulea dolens, or "blue phlebitis," is an acute fulminating form of deep venous thrombosis first described by Trémolières and VéRan [1] in 1929. Clinically there is sudden severe pain in a part of an extremity which quickly spreads to involve the whole limb. This is associated with pronounced edema of the foot and leg and later of the thigh. The most striking change is the severe cyanosis and the purpuric areas and petechiae which develop early and produce a most alarming picture. The limb becomes numb and cold, and the peripheral pulses disappear. Associated with these local changes there is rapid development of circulatory collapse and the clinical picture of shock. In the severer cases death results. In the less severely affected patients who survive, the disease follows the usual course of iliofemoral venous thrombosis with gradual disappearance of the edema and the purpuric areas and return of the arterial pulsations, sensation and warmth to the extremity.

In 1941 my associates and I [2] produced a similar condition in experimental animals. Extensive venous thrombosis of a hindleg was produced by ligation of the major veins and then intravenous injection of a carbon suspension in a retrograde fashion. In each instance massive edema and purplish discoloration of the extremity developed along with tachycardia, progressive drop in blood pressure and hemoconcentration. Extreme shock due to fluid loss and death followed in 87 per cent of our experimental animals. The increase in weight of the edematous hindquarter over the contralateral one varied between 4 and 6.1 per cent of the total body weight and was equal to 50 to 75 per cent of the calculated blood volume. Zimmermann and de Takats [3] have shown that such edema fluid may have a protein content of 1.25 to 3.4 per cent.

Muscle biopsies from the edematous extremity revealed early a distention of the capillaries and the presence of edema fluid in their vicinity and later thrombosed small and large veins along with hemorrhage between the muscle fibers and in the areolar and subcutaneous tissue. Postmortem examination showed that almost all the major and collateral veins in the extremity were thrombosed. The suprarenal glands revealed varying degrees of hyperplasia and microscopic hemorrhages in the zona fasciculata. There was pronounced dilatation of the central veins and sinusoids of the liver and occasionally dilatation of the capillaries of the lungs and of the intestinal mucosa.

From the Department of Surgery, Michael Reese Hospital.

1. Trémolières, F., and VéRan, P.: Syndrome d'oblitération artérielle du membre inférieur droit apparu au cours d'une phlébite superficielle et profonde avec embolies pulmonaires: Effet thérapeutique de l'acétylcholine, Bull. méd., Paris **43**: 1101 (Oct. 19) 1929.
2. Perlow, S.; Killian, S. T.; Katz, L. N., and Asher, R.: Shock Following Venous Occlusion of a Leg, Am. J. Physiol. **134**: 755 (Nov.) 1941.
3. Zimmermann, L. M., and de Takáts, G.: The Mechanism of Thrombophlebitic Edema, Arch. Surg. **23**: 937 (Dec.) 1931.

In follow-up experiments[4] we found that limitation of the loss of fluid into the involved extremity by preliminary administration of desoxycorticosterone acetate or mechanical limitation of the edema of the limb by a plaster cast prevented shock in most instances and the animal survived. Aside from the less pronounced edema of the tissues of the extremity the other changes were essentially the same. Our experiments also indicated that the development of shock following venous thrombosis depended not so much on the amount of the plasma fluid loss but rather on the rate at which it is lost. Some of our experimental animals survived when the fluid loss into the tissues was slow even when the amount lost was as great as in those animals that died of shock.

These experiments illustrated that an extremely large amount of fluid and blood can be lost into an extremity when its venous channels are almost completely occluded and may be sufficient to result in shock and death. It seemed to us that on rare occasions extensive thrombosis of the veins of an extremity in man might lead to death in a like manner.

Since our original experiments we have seen a number of patients with pronounced edema of an extremity following deep vein thrombosis. In all of those patients the edema developed slowly, over a period of several days, and, although there was mild hemoconcentration in a small number, no signs of shock developed, which indicated again that gradual fluid loss by edema does not produce shock. Recently, however, we observed a patient with a clinical picture which was similar to that seen in our experimental animals.

REPORT OF CASE

J. K., a 40 year old woman, was admitted to Franklin Boulevard Hospital on the service of Dr. S. Berger on Feb. 28, 1949, because of bloody diarrhea of several weeks' duration. A diagnosis of amebiasis was made after a complete physical and laboratory examination, and she was given specific therapy. Improvement was slow.

On March 25, one month after her admission to the hospital, a sudden severe pain developed in the left leg and thigh which was quickly followed by massive edema of the extremity to the groin and the development of extensive purpuric areas and numerous petechiae throughout the extremity. Associated with these local changes, a rapid thready pulse, pronounced perspiration, an anxious facies and extreme weakness developed. When she was seen in consultation about four hours after the onset she seemed to be in severe shock. The left lower extremity was greatly edematous to the groin, the diameter measuring about one and a half times that of the right. It was cold and cyanotic and covered with extensive purpuric areas. The arterial pulsations were absent in the involved limb, and the oscillometric measurements in the calf were zero. Blood examinations revealed a hematocrit reading of 70 per cent. Rough calculations from our measurements indicated that between 4,000 and 5,000 cc. of fluid was lost into the tissues of the left lower extremity.

Treatment consisted essentially of replacement of blood, plasma and fluids for the shock and lumbar sympathetic blocks to overcome the arterial spasm and the danger of gangrene. Anticoagulants were not used because of the danger of bleeding from the bowel. The following day the patient was greatly improved and out of shock. The hematocrit reading was 38 per cent. The extremity was warm, and the arterial pulsations had returned, but the edema and the discoloration remained unchanged for about four days and then began to clear up fairly rapidly. On April 1 the patient was taken home; the appearance of the extremity had improved, and the diarrhea was controlled.

On April 11 she was admitted to the Cook County Hospital for further treatment of the amebiasis. There was little residual edema of the left extremity, and the purpuric areas had almost completely disappeared. On April 13 sudden massive edema of the right lower extremity associated with extensive purpuric areas developed over the whole limb and the lower right portion of the abdomen and the right buttock, along with general signs of shock. She was given 1,000 cc. of plasma intravenously but died three days later. The left extremity, which had been involved previously, remained unchanged during this episode.

Postmortem examination revealed massive thrombosis of both iliac and femoral veins, severe ulcerative colitis, brown atrophy of the heart, acute splenitis, ulcerative chloecystitis and cholelithiasis and cloudy swelling of the kidneys. There was no peritonitis or extension of the inflammation of the bowel to the veins.

In 1948 DeBakey and Ochsner[5] were able to find only 32 cases of "blue phlebitis" in the literature and added one case of their own. Of the reported cases eight, or 25 per cent, terminated fatally. Most of the patients were adults, and in only a small percentage was the condition associated with prior surgical treatment. In two patients an upper extremity was involved. In five of the cases reported and in our case the condition developed while the patient was being treated for some form of ulcerative colitis. There is no known cause for the extremely rapid thrombosis of the veins that occurs. The extensiveness and rapidity of the process seem to indicate a different pathogenesis from that of the type of thrombophlebitis usually seen. DeBakey and Ochsner suggest that some unknown changes in the mechanism of blood coagulation in those patients associated with reflex arterial spasm and slowing of the blood flow may be factors in its development. Postmortem studies reveal that the venous thrombosis is extensive and involves not only the major veins but the small venules. Biopsy of the tissues from our experimental animals showed similar extensive involvement occurring within a few hours of the onset.

In addition to the cases reviewed by DeBakey and Ochsner, we were able to find five more cases in the recent literature. In a discussion of a paper on venous thrombosis in 1940 Phemister[6] described a woman with pronounced edema of an extremity who died in shock in 24 hours. At autopsy a fresh thrombus was found completely blocking the common iliac vein. From measurements of the limbs it was calculated that the volume of the involved extremity was about 4 liters greater than that of the other, and it seemed that the immediate cause of death was shock due to fluid loss.

Dennis[7] in 1945 reported a case of acute circulatory collapse after a common femoral vein ligation for postoperative venous thrombosis which was treated successfully with blood and plasma transfusions. Morgan, Allen and MacCarty[8] recently reported three cases of acute peripheral circulatory failure caused by acute venous thrombosis. In the one patient who recovered they calculated that approximately 4,255 cc. of fluid had been lost into the limb. In this patient the peripheral arterial pulsations were absent for 40 hours and a pronounced anemia developed along with transitory azotemia, which they believe was due to absorption of extravasated blood and diminished renal blood flow during the period of peripheral circulatory failure.

SUMMARY

A case of "blue phlebitis" is reported. There was massive involvement of first one and then the other lower extremity with an estimated fluid loss of 4,000 to 5,000 cc. into the left. Blood, plasma and fluid replacement plus anesthetization of the lumbar sympathetic chain on the involved side brought about prompt improvement during the first episode.

4. (a) Katz, L. N.; Killian, S. T.; Asher, R., and Perlow, S.: The Prophylactic Action of Desoxycorticosterone in Shock Due To Massive Venous Thrombosis, Am. J. Physiol. **137:** 79 (Aug.) 1942. (b) Katz, L. N.; Shleser, I. H.; Asher, R., and Perlow, S.: Prevention of Experimental Shock Following Venous Occlusion in the Dog by the Application of a Rigid Cast, ibid. **137:** 589 (Oct.) 1942.

5. DeBakey, M. E., and Ochsner, A.: Phlegmasia Cerulea Dolens and Gangrene Associated with Thrombophlebitis: Case Report and Review of Literature, Surgery **26:** 16 (July) 1949.

6. Phemister, D. B.: In discussion on Walter, C. W.: The Relation of Proper Preparation of Solutions for Intravenous Therapy to Febrile Reactions, in Symposium on Fluid and Electrolyte Needs of the Surgical Patient, Ann. Surg. **112:** 617 (Oct.) 1940.

7. Dennis, C.: Disaster Following Femoral Vein Ligation for Thrombophlebitis: Relief by Fasciotomy; Clinical Case of Renal Impairment Following Crush Injury, Surgery **17:** 264 (Feb.) 1945.

8. Morgan, E. H.; Allen, E. V., and MacCarty, C. S.: Acute Peripheral Circulatory Failure Caused by Acute Venous Thrombosis, Proc. Staff Meet., Mayo Clin. **23:** 425 (Sept. 15) 1948.

SUBCONJUNCTIVAL INJECTION OF CORTISONE IN IRITIS

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The purpose of this report is to demonstrate a practical, inexpensive method of utilizing cortisone for treatment of diseases of the eye. The method avoids the undesirable side effects sometimes seen with systemic administration of pituitary adrenocorticotropic hormone (ACTH) or cortisone.

METHOD

The conjunctiva is anesthetized with tetracaine (pontocaine®) hydrochloride. A pledget of 10 per cent cocaine is then placed on the bulbar conjunctiva at the site of the injection, usually at 12:00 o'clock, 5 to 6 mm. from the upper limbus. Cortisone acetate,[1] 0.2 to 0.4 cc. (25 mg. per cubic centimeter), is then injected subconjunctivally with a 23 gage needle. Subsequent injections when indicated are administered at different sites. The procedure is repeated in 48 or 72 hours if necessary.

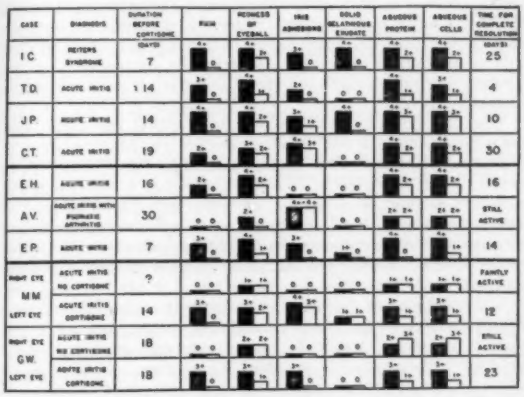

Fig. 1.—Results of subconjunctival administration of cortisone in acute iritis. The shaded portions represent the clinical gradation prior to treatment; the unshaded portions, the clinical gradation 24 hours after the cortisone injection.

RESULTS

Figure 1 shows the results in nine cases of acute or acute recurrent iritis. The shaded portions represent the condition before the cortisone administration. The unshaded portions depict the condition 24 hours later.

Seven of these nine patients had received the usual treatment, including atropine locally, typhoid vaccine injections intravenously, salicylates and heat locally without improvement prior to the local use of cortisone.

In two patients with bilateral iritis (M. M. and G. W.) the worse eye of each was treated with cortisone. The condition of the untreated eye either became worse (G. W.) or remained stationary (M. M.). The treated eye of both patients rapidly improved.

Eight of the nine patients showed remarkable improvement. In these successful cases there was a similar pattern: First, pain disappeared within four to 12 hours; second, hyperemia of the eyeball decreased markedly; third, gelatinous exudate, when present, melted away in 24 hours; fourth, newly formed iris adhesions previously unresponsive to atropine were broken away, and the pupil became widely dilated. Old organized synechiae were unaffected (figs. 2 and 3).

Dr. William Endres aided us by making available the cases on his service at the Los Angeles County Hospital.

From the School of Medicine, University of Southern California and from the Los Angeles County General Hospital.

1. The preparation used was cortone,® supplied by Merck & Company, Inc. (Dr. J. M. Carlisle, Medical Director).

Only two, or at most three, injections were necessary to convert a previously refractory inflammation into a subsiding process. Atropine was used locally during resolution.

Cortisone was used subconjunctivally in six cases of chronic granulomatous uveitis. The patients had previously been treated with pituitary adrenocorticotropic hormone [2] in adequate dosage for six to 10 weeks. Three patients who did not respond to adrenocorticotropic hormone did not respond to cortisone injected locally. Three patients who responded to adrenocorticotropic hormone had recrudescence of inflammation within a few days after cessation of its administration. Subconjunctival injections of cortisone arrested the inflammation in the hormone-responsive group. Repeated injections of cortisone have been necessary at one to three week intervals to maintain remission.

Fig. 2.—Acute iritis after one week of treatment with atropine and intravenous injections of typhoid vaccine. Note the intense hyperemia and the miotic pupil adherent to lens.

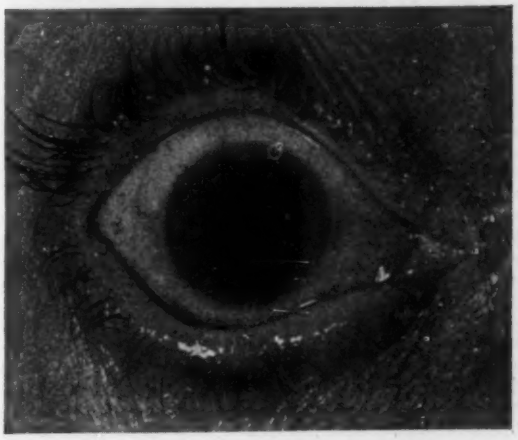

Fig. 3.—Same eye 24 hours after the first subconjunctival cortisone injection. Note the absence of hyperemia, the widely dilated pupil and the disappearance of iris adhesions.

COMMENT

The deposit of cortisone under the conjunctiva disappears gradually without leaving a visible trace. There have been no local harmful sequelae, either immediate or late, from these injections. The procedure is practically painless when done according to the technic described.

It is to be emphasized that cortisone injected subconjunctivally does not cure the iritis. However it does change the process

2. The pituitary adrenocorticotropic hormone was supplied by the United Laboratories, Pasadena, Calif., through arrangements with Mr. Richard Bruner.

from one of an acute increasing inflammation to a low grade, easily controlled, subsiding one. Atropine or scopolamine mydriasis was used during convalescence.

Subconjunctival injection of cortisone has an effect similar to but better than successful intravenous typhoid vaccine therapy. It has these advantages over the latter: (1) The effect is much more pronounced; (2) the patient is ambulatory, not prostrated by chills and fever, and is able to continue working; (3) there are apparently no contraindications; (4) it can be used in the aged and debilitated, and (5) it is successful when typhoid vaccine administered intravenously is ineffective.

It has some advantage over systemic administration of pituitary adrenocorticotropic hormone or cortisone: 1. It is inexpensive and accessible in the small amounts used. 2. It has a repository effect. Repeated injections are not required every eight to 12 hours. The deposit remains under the conjunctiva for several days during which time it seems to remain active. In most of the cases of acute iritis only two, and in none more than three, subconjunctival injections of cortisone were required. 3. There are no systemic side effects. 4. Hospitalization and laboratory follow-up are not required.

It is interesting to note that in three cases of chronic uveitis benefited by adrenocorticotropic hormone the subconjunctival injection of cortisone controlled the exacerbations which occurred after withdrawal of the other drug. Those cases of chronic uveitis unaffected by systemic administration of the pituitary hormone were likewise unaffected by local use of cortisone. It is possible that the results of the local injection of cortisone may be an indication as to whether parenteral treatment with pituitary adrenocorticotropic hormone would be effectual.

Fig. 4.—Deposit of cortisone subconjunctivally at usual site of injection.

The decrease in the hyperemia of the eyeball that results from subconjunctival injection of cortisone is unusual in that the pallor first appears over and surrounding the cortisone deposit and then spreads outward (fig. 4). This is contrary to the course of events with most other drugs injected under the bulbar conjunctiva, in which the hyperemia remains most intense at the site of the injection.

SUMMARY

A technic is described for the injection of cortisone subconjunctivally.

Nine patients with acute or acute recurrent iritis were treated with subconjunctival administration of cortisone. Eight patients were decidedly improved.

In three patients with chronic uveitis who had benefited by adrenocorticotropic hormone therapy exacerbation developed on cessation of its use, which was controlled by one injection of cortisone with remissions lasting from one to three weeks.

Three cases of chronic granulomatous uveitis unaffected by systemic adrenocorticotropic hormone were likewise unaffected by cortisone injected locally.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following report.

R. T. Stormont, M.D., *Secretary.*

THE STATUS OF BCG VACCINE

One of the most important attempts to develop an immunizing agent against tuberculosis began with the isolation and subsequent attenuation of a strain of bovine tubercle bacillus by Calmette and Guérin of France; this was tried first on calves and heifers in 1908. Oral vaccination of humans with the live attenuated organism (Bacillus Calmette-Guérin, BCG) was then undertaken. BCG vaccine has been widely used abroad, but skepticism has limited its use in this country. The Lübeck disaster of 1930, in which the orally administered vaccine cultured on egg medium produced death in 73 of 252 vaccinated infants, has been shown to have resulted from the accidental inclusion of a virulent strain. Nevertheless, doubt regarding the culture employed in this episode and the reliance placed on domestic control measures have discouraged more extensive employment of BCG vaccine in the United States. The absence of a repetition of this disaster, despite the enormous series of vaccinated infants in Europe, appears to support the contention that the vaccine is not dangerous when prepared from a properly attenuated strain.

The vaccine was administered first orally and later subcutaneously, because the parenteral route produced an allergic (immune?) response in a higher percentage of persons. It is currently administered in the United States by the multiple puncture technic, scarification or intracutaneous injection, to avoid the severer local reactions resulting from subcutaneous injection. For the same reason, a less concentrated preparation of the vaccine is employed for intracutaneous injection than for inoculation by the other two methods.

The instability of the living culture when suspended in a fluid preparation prevents exact control and determination of the number of viable organisms in the currently employed liquid product. The vaccine is adjusted for potency on the basis of moist culture weight; 1 mg. of moist weight growth of the culture should originally give an approximate count of not less than 20,000,000 viable organisms. The intracutaneous preparation contains 1.0 mg. per milliliter, and the multiple puncture-scarification preparation, 15 to 20 mg. per milliliter. The intradermal dose is presently limited to 0.1 ml. of the less concentrated vaccine. For several years the liquid vaccine has been prepared in the United States by the following laboratories: Research Foundation, Tice Laboratory, Room 201, 1835 West Harrison Street, Chicago 10; State of New York Department of Health, Division of Laboratories and Research, New Scotland Avenue, Albany 1, N. Y., and The Henry Phipps Institute, Seventh and Lombard Streets, Philadelphia 47. Each of these laboratories distributes the vaccine to those local and state health officials and other authorities who consider the use of the vaccine sufficiently established to warrant its employment in selected groups of tuberculin-negative persons unduly exposed to tuberculous infection.

The Biologics Control Laboratory of the National Institutes of Health has issued a statement of minimum requirements prefaced by the following remarks to indicate the shortcomings of present methods of standardization:

> More data are required on certain essential aspects of the vaccine before these requirements can be entirely satisfactory. These include (*a*) the number of viable organisms required in the injected dose, (*b*) the significance of the nonviable organisms present in the vaccine, (*c*) perfection of a fully adequate method of preparing the vaccine in the dried form and (*d*) establishment of a safe storage period and a proper dating period.

The minimum requirements of the federal agency include specifications providing for a 10 day limit of viability for liquid vaccine and up to six months for dried vaccine. Commercial distribution of the vaccine by regular manufacturers of biologic

products has not been feasible because of the relatively short life of the micro-organism in the currently used liquid preparations. The time required to complete potency tests on the liquid vaccine is longer than the 10 day limit for use after harvesting the culture. Furthermore, the ratio of viable to nonviable bacteria is subject to considerable variation after preparation of the liquid vaccine, so that it is not possible to estimate accurately the number of live organisms administered in the liquid vaccine at different intervals within the dating period. The nonviable bacilli are considered to have some immunizing effect, but the significance of this in comparison with the effect derived from viable organisms has been difficult to determine. Thus far, however, induction of allergy to tuberculin by means of a vaccine containing only killed bacilli has been less satisfactory than when attenuated live organisms were used. The successful preparation of a dried vaccine is likely to be a step in overcoming the problems of adequate standardization and wide distribution of the finished product. With the advent of stable dried preparations it may be easier to evaluate the ultimate efficacy of BCG in stimulating a positive tuberculin reaction.

The use of the tuberculin test is considered an essential preliminary to vaccination except in newborn infants. Only nonreactors should be given the vaccine. Those are considered susceptible who do not react to either 0.0002 mg. of purified protein derivative (PPD) or 0.1 mg. of old tuberculin (OT). Vaccination is performed within two weeks of the test in persons with negative reaction, and all vaccinated persons are retested with either form of tuberculin (preferably the same form and dose used prior to vaccination) after eight to 10 weeks. Follow-up testing of newborn infants may require use of a larger dose, 0.002 mg. of purified protein derivative or 1.0 mg. of old tuberculin. Revaccination is performed on those who remain tuberculin negative on retesting, and annual follow-up with retesting and chest roentgenogram of both initial reactors and nonreactors is advisable..

Encouragement for wider use of BCG vaccine stems primarily from statistical studies, made in this country and Europe, which tend to substantiate claims that the morbidity and mortality rate has been reduced among certain exposed segments of the population. Although the validity of certain previous studies is questioned by some authorities, it appears that, where the disease is prevalent through the inadequacy or impossibility of exercising proper control measures, the use of the vaccine has been shown to be justified. The following quoted statement on BCG vaccine, issued by the American Trudeau Society, Medical Section of the National Tuberculosis Association, summarizes the present opinion of that organization regarding the place of BCG vaccine in the control of tuberculosis:

> The members of the Society and other physicians in the United States have been interested for many years in the active immunization against tuberculosis with BCG. The expansion of public health activities in the field of tuberculosis control by official and voluntary agencies and the acquisition of new knowledge concerning immunity in tuberculosis have prompted the American Trudeau Society to make the following observations and recommendations:
>
> I. BCG vaccine prepared under acceptable conditions, and administered by approved technics to persons negative to tuberculin, can be considered harmless.
>
> II. The degree of protection recorded following vaccination is by no means complete, nor is the duration of induced relative immunity permanent or predictable. The need for further basic research on the problem of artificial immunization against tuberculosis is recognized and is to be emphasized. Studies should be directed toward (*a*) improvement of the immunizing agent, (*b*) development of criteria for vaccination and revaccination, (*c*) more accurate determination of which groups in the general population should be vaccinated (several well controlled studies are under way at the present time), (*d*) promotion of carefully controlled investigative programs, which, as a rule, will be carried out best under auspices of official agencies such as the U. S. Public Health Service, state and municipal health departments, and other especially qualified groups, and (*e*) devising of adequate record systems for management of statistical problems involved in recording and following large numbers of vaccinated people.
>
> III. On the basis of studies reported in the literature, an appreciable reduction in the incidence of clinical tuberculosis may be anticipated when certain groups of people who are likely to develop tuberculosis because of unusual exposure, inferior resistance, or both, are vaccinated. (*a*) In the light of present knowledge, vaccination of the following more vulnerable groups is recommended, provided they do not react to adequate tuberculin tests: (1) doctors, medical students, and nurses who are exposed to tuberculosis, (2) all hospital and laboratory personnel whose work exposes them to contact with the bacillus of tuberculosis, (3) individuals who are unavoidably exposed to infectious tuberculosis in the home, (4) patients and employees in mental hospitals, prisons, and other custodial institutions in whom the incidence of tuberculosis is known to be high and (5) children and certain adults considered to have inferior resistance and living in communities in which the tuberculosis mortality rate is unusually high.
>
> IV. It is recommended that efforts be continued to perfect and to meet in practice suitable standards for the production of BCG vaccine and that, when practicable, commercial firms be licensed under the National Institutes of Health to produce this vaccine.
>
> V. The Society believes that since BCG vaccination affords only incomplete rather than absolute protection, the most effective methods of controlling tuberculosis in the general population are (*a*) further improvement of living conditions and the general health, (*b*) reduction of tuberculous infection, which can be accomplished by modern public health methods and the unremitting search among presumably healthy individuals for patients with infectious tuberculosis, (*c*) prompt and adequate medical and surgical treatment of patients with active disease, (*d*) segregation and custodial care of those not amenable to accepted forms of therapy and (*e*) adequate rehabilitation.
>
> VI. It is to be emphasized that BCG vaccination must not be regarded as a substitute for approved hygienic measures or for public health practices designed to prevent or minimize tuberculous infection and disease. Vaccination should be regarded as only one of many procedures to be used in tuberculosis control.
>
> VII. Expansion of modern diagnostic, therapeutic and rehabilitation facilities is required at this time to make full use of these new methods which can accomplish further dramatic reduction of tuberculosis mortality and morbidity rates in the United States.

In view of the difficulties in standardization of the vaccine and the controversial nature of previously published reports, the Council also sought the opinions of various other authorities. Most of them agree that, as now prepared and used, the vaccine is relatively safe. Some skepticism has been expressed regarding its complete safety for general use in infants.

Opinion is varied as to its efficacy or place among other methods for the control of the disease. It is obvious that undue reliance must not be placed on the vaccine as a protective measure at the expense of established measures of control. Most authorities agree that the vaccine is useful only as a partial immunizing agent. Because positive reaction to tuberculin following vaccination merely indicates sensitization rather than real immunity, some clinicians question the reliability of the Mantoux test as a means of determining either the need for BCG vaccine or its effectiveness as a prophylactic agent. Furthermore, there is considerable variation in the care exercised in performance and interpretation of the intradermal tuberculin test. Conversion of nonreactors to reactors through large scale use of the vaccine may alter the significance or destroy the value of the tuberculin test as a diagnostic screening method for detecting acquired exposures in community control programs.

Most authorities agree with the statement of the American Trudeau Society that BCG vaccination should be performed only among selected groups of nonreactors who are most likely to be exposed to infection. Physicians in each locality must thus determine whether its use is warranted in accordance with present restrictions and without jeopardy to established control methods. At present, the control of tuberculosis by BCG vaccination should still be considered experimental. There is no scientific support for the contention that BCG vaccination should be extended to all persons with the same assurance that can be recommended for smallpox vaccine and other well established immunizing agents. Whatever protection may be provided by BCG vaccine, there is little doubt that it does not stimulate the development of the same degree of active immunity as is obtained with characteristic immune response produced by derivatives of the causative agents in certain other communicable diseases.

The Council desires to encourage the search for an effective immunizing agent against tuberculosis. Improvements in BCG vaccine and further controlled studies which will permit definite conclusions regarding the value and limitations of this agent are necessary. At present the general use of BCG vaccine for all infants, children and tuberculin-negative persons in this country does not appear to be warranted and should not be encouraged.

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BRONCHOSCOPY IN PULMONARY TUBERCULOSIS

Bronchoscopy should always be determined by the lung specialist, and only on rare occasions by the bronchoscopic expert, according to Nils Froste [1] of the Central Sanatorium in Sandtrask. On the other hand, he may determine contraindications or reject bronchoscopy because nothing can be gained from it in certain cases. An effort was made by Froste to observe whether bronchoscopy is a diagnostic and therapeutic aid in pulmonary tuberculosis and whether the method presents too great a detriment or hazard to the patient. This is particularly pertinent when paraaminosalicylic acid and streptomycin are used in the treatment of bronchial conditions.

As a result of over one thousand bronchoscopic examinations on 420 patients, Froste notes debilitation and extensive laryngeal tuberculosis as contraindications. As a rule, perforations can be recognized early. Later, ulcerations make them indistinguishable from mucous membrane tuberculosis. In 88 cases bronchoscopic changes were not observed; in 52 cases nonspecific changes were noted that, in a number of cases, caused stenosis. The local treatment of tuberculosis of the mucous membrane has lost importance since the advent of streptomycin and paraaminosalicylic acid. Cauterization with 10 to 50 per cent silver nitrate solutions and galvanocautery were used for treatment, with greater bronchostenosis from the cautery. In patients suspected of having bronchostenosis, the clinical symptoms to a certain degree proved unreliable or the stenosis was beyond range of vision. In about half the cases with suspected valve mechanism, stenosis was probably the cause. The only form of treatment was removal of granulations causing the valve, but no suitable case was encountered. Dilation gave no lasting results, nor were results of aspiration treatment encouraging. For atelectasis, the cause was shown in about 45 per cent of those examined, and about half of these had tuberculosis of the bronchial mucous membrane with or without bronchostenosis. Silver nitrate, cautery and aspiration were used; the atelectasis disappeared in four of 23 treated with silver nitrate, while the atelectasis disappeared only temporarily after aspiration. For hemorrhage of unknown origin, bronchoscopic examination did not reveal the cause. Occlusion treatment with galvanocautery revealed cavity collapse and bacillary freedom in about one fourth, while the remainder were unimproved. Aspiration treatment was used in pressure cavities, in nonpressure large cavities and for stagnant secretions. In six cases with pressure cavity, collapse did not occur; results were equally disappointing with larger-sized nonpressure cavities. Bronchoscopy can be important in identification of the side-producing bacilli and in the procurement of secretion for examination. In differential diagnosis, cases of bronchial cancer and Schaumann's lymphogranuloma benignum were revealed. In some cases bronchoscopy was performed before pneumothorax, and thus pneumothorax was omitted in a few cases with bronchostenosis. Atelectases occurred in about a third of the cases of pneumothorax without previous bronchoscopy. In pulmonectomy and lobectomy, bronchoscopic examination is valuable for ascertainment of a healthy bronchial stump. One fourth of the cases with positive tuberculous findings showed progression after biopsy. Fewer complications arose in 10 per cent of the bronchoscopic examinations, mainly in cases of bronchial mucous membrane tuberculosis and bronchostenoses. Bronchoscopy gives the clinician much previous information from a diagnostic and therapeutic viewpoint. As far as complications are concerned, anesthesia constitutes the greatest danger, but, with knowledge of the proper methods of treatment, such fatalities can be avoided.

1. Froste, N.: Bronchoscopy in Pulmonary Tuberculosis: A Clinical Study of 1,001 Cases of Bronchoscopic Examinations, Acta tuberc. Scandinav., 1950, supp. 23, pp. 7-119.

ACTIVITIES OF STATE MEDICAL SOCIETIES IN CHRONIC ILLNESS PLANNING

State and local medical societies are taking an active part in launching chronic illness activities throughout the country, according to a recent survey by the Commission on Chronic Illness. Statewide studies of the chronic illness problem have been made with medical society cooperation in California, Connecticut, Illinois, Maryland and New York. The New Jersey Medical Society is advising the Governor's Committee on Chronic Illness in that state, and in Indiana a recently appointed Governor's Committee on which the Indiana Medical Association is represented is now getting underway. Three state societies, North Carolina, Minnesota and Ohio, recently appointed chronic illness committees. In Wisconsin the medical society has been working actively to develop chronic illness legislation for some time. Replies to the commission's questionnaire from the New Mexico, Colorado, Oklahoma and Rhode Island societies indicate considerable interest in establishment of chronic illness committees in those states.

Although chronic illness affects all age groups, the steadily increasing proportion of the aged in our popula-

tion gives activities in the field of geriatrics much significance in combating the total chronic illness problem, and some of the state societies are approaching the problems through special committees on the aging. In Michigan the geriatrics committee of the state medical society appointed a Subcommittee on Problems of Caring for the Aged, and the Washington State Medical Association reports that one of its committees has made a survey of the aged group in the state. Committees on care of the aged have been established by some of the county societies in Wyoming. The specific chronic diseases have for many years been under consideration by committees of the state societies. Through this single disease approach medical societies in many states have stimulated programs concerned with alcoholism, arthritis, cancer, diabetes, rheumatic fever, conservation of vision, prevention of deafness, industrial health, nutrition and physical and vocational rehabilitation.

The establishment by state medical societies of committees on chronic illness seems to be an indication of a growing recognition of the common medical, social and economic factors of chronic disease and the need for a unified approach to the whole problem. A reply from one state medical society to the commission's questionnaire succinctly expresses this viewpoint: "While each chronic disease or group of diseases is a specialty . . . of some physicians, it doesn't seem advisable to have a committee for each disease, as we have started to do. The solution may be to have a Committee on Chronic Illness with subcommittees for the various diseases."

WHY MEDICAL ECONOMICS?

Recent papers by Dr. R. B. Robins, Vice President, American Medical Association, have provoked considerable comment on the questions What is medical economics? What does it mean? The answers are important to the general population and particularly to the medical profession. They are important because they are intimately and directly related to health, happiness and freedom.

Increasingly, medical economics is a topic of everyday conversation. People everywhere are now asking about the cost of medical care, the numbers of health personnel, ways to make medical care insurable and means of assuring every American the medical care he needs. As never before, medical economics is in the spotlight of public and medical discussion. Why is there this sudden interest? Is it due to a grave health crisis in this country? Has the cost of medical care suddenly shot upward? Is the prevailing pattern of medical care no longer meeting the needs of most Americans?

Technological changes in medical treatment have come so fast in the past 10 years that they now may seem overwhelming and, in some respects, confusing to those who attempt to interpret their significance. Some of the new wonder drugs have greatly reduced the cost of treating many diseases, such as mastoid infection and pneumonia, but increasing knowledge of how to treat the sick and improvements in diagnostic technics have introduced some expensive and complicated procedures which increase the dollar cost of medical care to some patients and seem to produce greater variability in costs than formerly.

The dollar cost of medical care has risen during the postwar inflationary period. Medical care prices, however, have not risen nearly as fast as the cost of living. Moreover, the entire amount paid for medical care during the past 20 years has fluctuated narrowly around 4 per cent of total consumer expenditures for all goods and services. A family, however, may well look with alarm at the prospect of severe illness, which can mean a heavy drain on the family purse during these days of cheap money. The costs of medical care in any given year for particular families may exceed the normal of 4 per cent of total family purchases, although, on the other hand, the costs in other years may be negligible. The important thing is for the average family to view with such alarm the prospect of severe illness that it seeks a way to offset the temporary financial hardship that may occur when serious illness strikes. The most widely discussed and practical way is voluntary insurance. Americans have traditionally resorted to insurance when faced with risks which can be predicted only for a group. Today the American family can largely solve its own problem of medical economics by buying voluntary health insurance. Inflation has made it more necessary for the family to use insurance to normalize the costs of medical care and to buy, for example, more fire and life insurance.

But it is not the dollar cost alone which has brought medical economics to the forefront of public attention. Medical progress has transformed the life of the average man. Even 20 years ago there were serious problems of maternal and infant mortality in many sections of this country. Today the low maternal and infant mortality rates and the high life expectancy at every age in the best state and the worst are remarkably close together. The degree to which medical care is available to the general population and the favorable circumstances which have provided better food, housing and sanitation as our standard of living has improved have produced an ever longer life for more and more people. The number of physicians per 100,000 population in this country is the highest of any nation except Palestine, where many of the refugee physicians are not in practice.

Medical economics has come to the forefront in recent years because the vexatious problems of health of a decade or two ago have largely been solved, although others appear to take their place in the unending quest for better health and longer life. Ironically, the increase in the number of persons dying from heart disease and cancer is a measure of past medical progress. Health progress has enabled an increasing

number of persons to live on into the higher ages of life when security becomes a major objective. And the voting strength of these older people who seek security —some would sacrifice basic freedoms to have their future guaranteed by law—is growing. Health progress has given them increased voting power.

With an aging population, medical economics becomes a part of a much larger problem of the need to change our social concepts to fit a new world. People made conscious of the magnificent achievements of American medicine look for more and more. And more and more they will have. Yet it is the disturbing premise of the practice of medicine that the doctor cannot win. He can change only the age and cause of death; he cannot prevent the eventual occurrence of death. Our task today is to redefine the problems of medical economics. An older population needs income—not medical care alone. Our working population needs to learn about voluntary insurance—not be forced to purchase overpriced compulsory insurance. And we must remember that, while medical care can never seem adequate to the family of a dying person, it can go on to provide more and better years for more and more of the American people.

Medical progress has come so fast that it seems to many people to be automatic and effortless. Yet the effort required in an inflationary period to earn the money to pay for the medical care resulting from this progress, as well as for all other goods and services, continues to be very real to the consumer. In summary, medical progress itself and cheap money are the principal reasons for the emergence of medical economics as a major aspect of the practice of medicine.

ACTUARIAL PROGRESS BY BLUE CROSS AND BLUE SHIELD

Voluntary health insurance plans have grown during the past two decades from humble beginnings. While the growth has been progressively forward, at times it has been erratic. In some instances plans were started by persons who, while well meaning, knew little about insurance. In most instances, however, expert advice has guided the development of the various plans and, as experience was gained, more effective organization, planning and coverage were provided. In various ways such improvement is obtained. For example, the recent publication of an actuarial and statistical manual by the Blue Cross Commission and the Blue Shield Commission, replete with punch card forms and coding instructions for the many types of illnesses which result in claims, marks a significant step forward. Some of the older plans, however, have well established statistical procedures. Although this manual has not yet been put into operation by all Blue Cross and Blue Shield plans, its publication signifies clearly to the American people that those responsible for these plans are determined to develop actuarial and statistical analyses of their operations so that they may attain or even exceed the level of knowledge which many of the older insurance companies have already developed regarding their own operations.

The Blue Cross Commission and the Blue Shield Commission urge their member plans to use these new procedures, and it is expected that by the end of 1951 most plans will be keeping these uniform actuarial and statistical records. When all plans collect and record their basic data regarding income, membership exposure and utilization according to the procedures set forth in this new manual, the boards of directors of these plans should be in a position to determine future planning with even more confidence. The actuarial and statistical committee of the Blue Cross Commission and the Blue Shield Commission, and particularly their actuarial staff, are to be congratulated for taking this progressive step. It will help the plans to meet the ever changing needs of the American people for health insurance.

THE USE OF EXPERIENCE

In an address to the Hunterian Society, Sir Heneage Ogilvie,[1] distinguished British surgeon and editor of *The Practitioner,* emphasizes the importance of experience, as a prerequisite for judgment, in the field of medicine. Experience, as Sir Heneage points out, consists of impressions received by the five senses, but many fail to gain wisdom from these impressions, for "experience can be made useful only by certain qualities of the mind, some given by inheritance, some by parental example, some by the influence of teachers or writers."

Sir Heneage Ogilvie considers that inability to profit by experience may be attributed to three factors. First, through a failure to acquire the habit of thought, a person may be unable to classify his experiences and thus to step from "experience to experiment." Second, through overclassification, he may fail to grasp the significance of a new experience in his effort to place it under an existing category. Third, specialization of knowledge may blind him to his own areas of ignorance, leading him to forget that "the highest wisdom is the realization that no man can know everything."

The problem then arises as to how to utilize our experiences to best advantage. Sir Heneage suggests that each new experience should be welcomed, scrutinized carefully and with an open mind and then allotted "to one of the trays on our mental desk: 'action,' 'pending' or 'finished.'" In so doing, however, individuality must be preserved, and knowledge received from books and teachers should be looked on as "a help, but not as a directive." This mental file of experiences requires constant rearrangement, for earlier experiences must continually be reexamined and reclassified on the basis

1. Heneage, O.: The Use of Experience, Brit. M. J. 2: 663 (Sept. 24) 1949.

of more recently acquired knowledge. Thus conclusions should never be considered final but "merely as the best we have been able to do with the material we have encountered so far."

Experience properly used provides a standard whereby fresh experiences can be judged. Thus experience permits a physician to sum up quickly his patients as human beings, to recognize instantly danger signs in common complaints, to appreciate the limitations of a given technic and to tackle new problems with assurance. It is from experience that wisdom is gained, but "let us remember," cautions Sir Heneage, "that experience is never finished and wisdom is never complete."

MORBIDITY A PROBLEM IN TUBERCULOSIS

The British tuberculosis publication *Tubercle* calls attention to a condition that has confused medical interpretation for centuries.[1] For a long time *Tubercle* has been interested in the paradox of the decreasing tuberculosis death rate in England and Wales and the apparent increase in morbidity, and three years ago it produced graphs showing that the United States and Canada were having a similar experience. At that time the opinion was expressed that the increase in notifications represented an improvement in ascertainment rather than a true increase in morbidity, and this view is still held today. The threshold of notification seems to be at a different level for each doctor. Some report symptomless primary lesions in children; others do not; some even notify at the time of conversion of the tuberculin test; some report symptomless quiescent lesions discovered at mass radiography, which is most likely when the examinee is in the armed forces. Pleural effusions often escape notification as do tuberculous eyes or skin. A zealous physician, seeking a record in his district, gives the superficial impression that a serious epidemic has been sweeping his district since his arrival. New men and older men of modified opinions have meant an awareness of tuberculosis, and reported patients now qualify for more benefits than formerly. Consequently more patients are reported and the apparent morbidity increases. With the increase in the age at which first infection occurs, one must expect an increase in morbidity; primary infection is more serious in postpuberty, about which *Tubercle* expresses uneasiness and states that if there is a true increase in morbidity in young persons, then by all previous rules there should be a similar increase in mortality. It is doubted that this is occurring, but time will tell. Thus what appears to be a simple problem in tuberculosis is not necessarily simple when examined statistically.

1. Morbidity, editorial, Tubercle **31**: 197, 1950.

COXSACKIE POLIOMYELITIS INFECTION

In the 1949 epidemic in Easton, Pa., fecal samples were collected from 48 consecutive patients admitted to the hospital for poliomyelitis. From 15 of these patients Melnick and Kaplan[1] of Yale University isolated both poliomyelitis and Coxsackie viruses. The question arose as to whether this meant a dual infection or merely a passive transfer of one virus through the alimentary tract. To answer this question they obtained serums from two typical paralytic patients on the third and fourth day of the disease and about 30 days later. An 18,000 r.p.m. supernate of a 1:10 dilution of the patient's stool was mixed with an equal volume of his own diluted serum. After standing for two hours at room temperature, each serum-virus mixture was inoculated into three monkeys in a test for poliomyelitis virus and into at least eight newborn mice in a test for Coxsackie ("C") virus.

In one patient the highest serum dilution which neutralized "C" virus on the third day of the disease was 1:10, increasing to a titer of 1:90 by the thirty-second day. A dilution of 1:10 of the same serum also neutralized completely the patient's poliomyelitis virus on the third day, increasing to a titer of 1:270 by the thirty-second day. Similar titers were obtained with the second patient.

Melnick concludes from this evidence that they were dealing with an infection with the two viruses. It is conceivable that the clinical symptoms might have been milder if the superimposed "C" virus had not been present. "C" virus may conceivably be one factor which turns a nonparalytic into a paralytic case.

POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

The semiannual listing of postgraduate continuation courses for physicians, covering the period Jan. 1 to July 15, 1951, appears elsewhere in this issue. These data, prepared by the Council on Medical Education and Hospitals, include about 750 courses varying in length from a few days to several months and are available both for the physician in general practice and the specialist. Courses are being given in 29 states. The subjects covered embrace 45 major areas in the field of medicine. The increasing number of courses available for continuation study for the general practitioner is of particular interest. In keeping with the present world situation, courses are being presented in civilian defense and the nuclear sciences. The Council endeavors to make this listing as complete as possible. Institutions and organizations whose courses are not included in the present list are invited to furnish the Council with details pertaining to the opportunities that they have developed for continuation study by physicians.

1. Melnick, J. L., and Kaplan, A. S.: Proc. Soc. Exper. Biol. & Med. **74**: 812 (Aug.) 1950.

WASHINGTON NEWS

(From the Washington Office of the American Medical Association)

Civil Defense Administration

It is now clear that the federal government is going to move into the civil defense situation, and without delay. This will mean, among other things, that medical preparations will be stimulated all down the line and that a start can be made on building up regional stockpiles of medical supplies. Since last September 19 a bill to create a Federal Civil Defense Administration has been before the Senate Armed Services Committee (S. 4162, which was reviewed at some length in this space on September 30). Last week several similar bills, but giving the federal government greater power, were introduced in both House and Senate. But Mr. Truman did not wait for Congress to act. Instead he used his executive powers to set up a Civil Defense Administration, which will function as an independent agency while Congress debates the bills. Civil defense activities of the National Security Resources Board, including its medical section, were moved to the new agency.

Mr. Truman did not immediately make public the executive order effecting the changes, so it is impossible to say just how much authority has been delegated to the new agency and its director, Millard F. Caldwell Jr., former Florida governor and former congressman. However, there is no question that Congress shortly will vote Mr. Caldwell all the powers needed to carry out his assignment. Under all the bills, the Civil Defense Administration would knit together regional and local civil defense organizations and authorize the federal government to step into the picture if state or community groups fail to meet their responsibilities in case of disaster.

Demands for Medical Manpower

At this writing it is impossible to say how many more physicians will be needed for the expanded military mobilization. Since July 1 the armed forces have increased from about 1,500,000 to just under 2,200,000. Up to the time of the new Korean crisis, military planners were aiming at a total force of 2,800,000 by July 1, 1951. It was expected that the accompanying medical requirements would be met largely by physicians classified 1-A and 1-A-O in the draft and reserves of similar status. However, plans now call for reaching the 2,800,000 mark several months earlier. When that time comes, the services undoubtedly will have to start calling in doctors now in deferred draft classifications, as well as reserves with World War II experience. When Mr. Truman made his request for $18,000,000,000 in supplementary defense funds, he did not specify a new manpower total but used these words to make it plain that one would have to be set: "We now face the necessity of having to raise our sights both in terms of manpower and in terms of production."

Last fall the services asked for a manpower ceiling of 3,500,000, but Congress refused to go that high. If, in view of the more critical situation, that total should now be decided on, several thousand more physicians would have to be provided—and most of them would be men who now are not expecting to be called.

The Doctor Draft

The National Advisory Committee to the Selective Service System, set up to assist in the doctor draft, has scheduled a conference of state advisory committee representatives for January. The National Committee will meet on January 11 and the state members on January 11 and 12. The plan is to have the chairman and two other members of each state committee present, representing physicians, dentists and the state health officers. Current problems will be discussed, particularly difficulties in effecting deferment of essential interns and residents.

In a message to state committee chairmen, Dr. Howard A. Rusk, chairman of the national committee, urged all advisory committees to support "unequivocally" requests for deferment of men who have not finished their first year of internship. At present, internship is interpreted as postgraduate education, but the requirement of one year's internship for military medical service, and generally for civilian practice, suggests that local boards would be willing to defer men in this status.

Dr. Rusk also advised state chairmen that hospital training beyond one year is to be regarded as a residency, not an internship, even though the internship may be of two years' duration. Meanwhile, National Selective Service Headquarters has requested local boards to "reopen and consider anew" the case of any special registrant at any time prior to issuance of an induction order "if the state or local advisory committee submits evidence and requests deferment."

Other important developments in the doctor draft:

1. The fact that a man has been placed in 1-A or 1-A-O does not necessarily mean he will be inducted immediately. A number of Selective Service boards so designated registrants in order to have them complete their physical examinations and be ready for induction should the advisory committees decide them available. If evidence suggests such men should be deferred, state and local advisory committees are urged to take action.

2. There are no blanket policies for interns, residents and teaching and research personnel; advisory committees consider each case individually.

3. In determining essentiality, advisory committees are giving particular attention to teaching programs and small community hospitals whose one year residents are necessary for the continuation of adequate services. Dr. Rusk said that inquiries indicated shortages particularly in psychiatry, neurology, public health, radiology, anesthesiology, pathology, physical medicine and rehabilitation, tuberculosis and research.

4. Preliminary estimates based on samplings indicate that, of the 14,000 physicians registered in priorities 1 and 2 of the draft, about 7,400 are currently in residency training and 1,800 in internships. This means that well over half of the potential supply for the first call are located in hospitals, where their immediate removal would in many cases create community problems.

Military Notes

The Air Force still is accepting reserve commission applications from registrants in draft priorities 2, 3 and 4, but is no longer accepting applications from those in priority 1. . . . The Army is calling up a number of Medical Service Corps reserves through the rank of captain on mandatory orders. . . . The Army wants 3,000 volunteer nurses and 250 women medical specialists, to meet requirements through June 30, 1951. The Army already has called 650 nurse reserves and 145 medical specialists on mandatory orders, and 477 nurses and 17 specialists have volunteered. Incidentally, the Army has reached the point where its nurse reserve rolls are

deceptive; 2,200 of them are now on duty at Veterans Administration hospitals, and other hundreds are in similar essential positions or are ineligible for recall because they have children under 18 years of age.

Committee on Chemicals in Foods

The House Select Committee on Chemicals in Foods, resuming hearings in Washington, cited an article in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as evidence that the public requires more protection. The item was a note of caution, "Pesticides: A Statement Concerning Needed Information" (**142**:259 [Jan. 28] 1950). The committee counsel read a digest of the article to Lea F. Hitchner, executive secretary of the Agricultural Chemicals Association (a group of producers) and asked whether he disagreed. Mr. Hitchner said he did disagree and that he thought the Council on Foods and Nutrition, which authorized the statement, might believe differently now. He said that subsequently the Council had been informed of the tremendous amount of research work being done on these chemicals. However, in reply to another question by counsel, he said he had not asked the American Medical Association Council for a supplementary statement.

Prior to this exchange, Mr. Hitchner had said that his association believed that what was needed was not a new law to protect the public but better enforcement of the present law. He said that 20 of the 30 major producers are spending about $3,000,000 a year in research.

Another witness, Dr. Arnold J. Lehman, director of the Division of Pharmacology, Food and Drug Administration, discussed results of investigations on toxicity of several fungicides, pesticides and other substances. He said FDA had worked for two and a half years on a study of dulcin, an artificial sweetening agent about 200 times as sweet as saccharin. According to Dr. Lehman, the investigation made it quite evident that: "dulcin is a poison and should not appear in food." He said that producers of dulcin preparations and a similar product, identified as P-4000, had complied with requests that they not be used in food. These substances, he said, were used on rats, giving the animals proportionately the same amount of the drugs humans would receive. Dr. Lehman said the substances were found to "inhibit growth, to have adverse effects on blood and to produce liver tumors." He noted that one trade name for dulcin is sucrol but emphasized that this is not to be confused with sucaryl,® which FDA has found to be not harmful.

Dr. Lehman said use of boric acid and borax in food processing or packaging is harmful and that the toxicity level of three other fungicides is "too close to the danger line." These he identified as sodium orthophenyl phenate, diphenyl and dehydroacetic acid.

Dr. Lehman described the insecticide chlordane as "one of the most toxic of insecticides we have to deal with." He said it penetrates the skin readily, is volatile and is "very toxic to liver and kidneys." He said in his opinion it was four or five times as poisonous as dichlorodiphenyltrichloroethane (DDT). Dr. Lehman said that chlordane, as sold in hardware stores for use in spray guns, is too dangerous for home use, although if applied properly is not harmful for certain specific purposes. Dr. Lehman acknowledged that the Food and Drug Administration has no authority in certain fields, even where toxic agents are being distributed.

The committee, under the chairmanship of Representative James J. Delaney (Democrat, New York) is investigating chemicals introduced in foods, chemical pesticides (applied to growing food crops and as chemical preservatives) and chemical fertilizers. One of the suggestions is that the Food and Drug Administration be given the same authority over these substances that it now has over new drugs.

Other witnesses during the week included C. W. Crawford, Deputy Commissioner, Food and Drug Administration; Dr. James B. Allison, director, Bureau of Biological Research, Rutgers University; Dr. John C. Krantz Jr., University of Maryland School of Medicine; Dr. Robert S. Harris, professor of biochemistry of nutrition, Massachusetts Institute of Technology, and representatives of the Department of Agriculture and several cooperative associations. Hearings continue through December 19.

Notes

An issue of *Public Health Reports* (vol. 65, no. 46) is devoted entirely to health resources; a fairly complete picture of civil defense preparations and problems to date but not too much on military aspects . . . Canada and the United States are working on an international agreement for civil defense . . . Acting director of NSRB's Civil Defense Office told the American Welfare Association that there could be no mass evacuation of great cities in case of attack. James J. Wadsworth said, "There will be no retreat from the production lines. There will be no voluntary surrender of a single machine, or a single home, that might help our armed forces to wage war." . . . The American Pharmaceutical Manufacturers' Association has been urged to serve as one of the strong points in civil defense planning, particularly in development of new drugs, establishing storage depots, utilizing laboratories and experimental operating rooms as emergency medical centers and offering its personnel for emergency sick care . . . Of the 100,000 persons helping FSA prepare material for the White House Conference on Children and Youth, held here this week, 15,000 were physicians, teachers, and others dealing with children. Among the physicians to give keynote speeches for the conference were Leonard W. Mayo, and Benjamin M. Spock, both of Rochester, Minn. . . Schools and hospitals wanting to share in United States surplus property now have a clearer picture of what to do. An office of Field Services, Division of Surplus Property Utilization, has been set up in FSA to handle distribution to nonprofit institutions, as authorized by the last Congress. . . . The Navy's Bureau of Medicine and Surgery personnel are sponsoring "Operation Toy" to send gifts to 500 refugee children in Hoffheim, Germany . . . The first of the Navy's three volume series, "Color Atlas of Pathology," has just been published by the J. B. Lippincott Company, Philadelphia. Designed as a usable standard of comparison for study and interpretation of gross and microscopic findings in pathology, this first volume took six years to prepare. Other volumes will be on the market by 1954 . . . The National Technical Task Committee on Industrial Wastes, meeting for two days in Cincinnati, worked on problems of organizing research in water pollution . . . The Gorgas Memorial Institute of Tropical and Preventive Medicine has reelected the following officers: Dr. J. F. Siler, president; Maurice H. Thatcher, vice president; Dr. Walter A. Bloedorn, secretary; Hulbert T. Bisselle, treasurer, and Dr. Donald A. McCormack, assistant treasurer. Mr. Thatcher is also general counsel . . . The Department of Agriculture reports people now are eating just about what they did 40 years ago (per capita), but now greater emphasis is on fruits, vegetables and dairy products. . . . Dr. Thomas Parran, ex-surgeon general and now dean of the Graduate School of Public Health at the University of Pittsburgh, is on President Truman's Advisory Board on International Development, guiding the Point 4 program . . . 32,544 handicapped persons were employed through state employment centers during October, the highest total for any one month ever reported.

ORGANIZATION SECTION

PRESIDENT'S ADDRESS TO THE HOUSE OF DELEGATES

ELMER L. HENDERSON, M.D.
President, American Medical Association

Mr. Speaker, Members of the House of Delegates:

In this general report to you today, I should like to touch briefly on five important subjects, in the following order: financial support of medical education, the position of the American Medical Association with respect to the program of hospital standardization, public health units, the results of the A. M. A. nation-wide advertising program and the significance of the November elections.

FINANCIAL SUPPORT OF MEDICAL EDUCATION

In the last four years the attention of the public and the profession has been called repeatedly to the fact that the postwar period has been a difficult one financially for our medical schools. Inflation, rising costs, reduced income from endowment, and fewer large benefactions, together with increased responsibilities for education, research and community service, have created problems of varying magnitude for the individual schools. At a time when advances in medical science make refinements and improvements in medical education desirable, schools have found it difficult to secure the funds needed for such developments. Furthermore, the present international crisis will in all likelihood create still further problems for the schools.

During the postwar period, increased local support has been of major assistance to many schools in meeting their financial problems. Other schools, particularly the privately endowed schools, have not been so fortunate. For the most part they have not been able to increase their income in proportion to the increases in their costs.

The past year's controversy over the question of federal aid for medical education has made many, both within and without the profession, forget that federal aid is but one segment of the problem of the future financial support of the medical schools. Discussions of this subject have tended to be limited to the narrow issue of whether federal aid is necessary or desirable. Many other sources of financial aid to medical education have been overlooked, and the profession's responsibility to assist actively in gaining additional support for the schools has not been fully recognized. Events of the past year have made it clear that there are those who interpret the American Medical Association's opposition to the bills for federal aid to medical education presently before Congress as indifference to the problems of the medical schools and the needs of the nation for adequate facilities for the training of physicians. We must make it clear that the profession is not indifferent to these problems. Let us face clearly our obligation individually and collectively to provide significant financial assistance to the medical schools and to study other ways by which we can help them meet their problems.

POSITION OF AMERICAN MEDICAL ASSOCIATION WITH RESPECT TO THE PROGRAM OF HOSPITAL STANDARDIZATION

At the San Francisco meeting the Board of Trustees learned that the American College of Surgeons was considering the possibility of conducting its program of hospital standardization in cooperation with other interested organizations. It also was reported that the American Hospital Association had expressed its willingness to assume major responsibility for the future conduct of this program. Subsequently, the House of Delegates of the American Hospital Association passed a resolution authorizing the establishment of a program of hospital standardization to be administered by its Trustees.

Recognizing that any program of hospital standardization would have a direct bearing on the standards of medical practice in hospitals, the Trustees of the American Medical Association, following the San Francisco meeting, began a series of consultations with representatives of the American College of Surgeons, the American Hospital Association and the American College of Physicians in an attempt to clarify the position of these several organizations. As a result of these conferences, I can report that very real progress has been made toward the objective of developing a cooperative program in which the best interests of the public, the hospitals and the profession will be considered.

The most important development has been the decision taken by the American College of Surgeons at its annual meeting this fall to continue its program of hospital standardization in the hope that within the near future a satisfactory plan can be developed for a program in which the American Medical Association, the American Hospital Association and the American College of Physicians also will participate.

Since this decision was reached by the American College of Surgeons, further conferences have been held and further progress has been made. At the last conference two weeks ago, a joint committee of the four organizations named was appointed to draft a basic plan for a cooperative program. The outlook for an agreement within the next six to twelve months on a plan that will be satisfactory to all the interested organizations is very good indeed. I think it important that the House of Delegates should know that after certain initial misunderstandings were cleared away, the representatives of the four organizations have found themselves working together harmoniously in an effort to achieve the common objective of an expanded program which will insure better care of the sick.

PUBLIC HEALTH UNITS

The American Medical Association has long believed that the existence of effective and properly operated public health units is basic to the maintenance and improvement of the health of the people. As early as 1883, a report was made at the annual meeting of the Association covering a survey conducted to ascertain what states and counties had health departments. In the years that have followed, our interest in the subject has remained unabated. Resolutions have been adopted by the House of Delegates urging complete coverage of the nation's population by county, district or regional full time modern health units. Point 6 of our 12 point program gives proper and additional emphasis to the important role that public health departments must continue to fill in our ever expanding and untiring efforts to provide the people with better and better health care. Tremendous progress has already been made; much more needs to be done.

I stress this subject because, unfortunately, action taken by the House of Delegates at the San Francisco meeting in June 1950, with reference to a bill in Congress to authorize federal financial aid for the development of health departments, has led to misunderstanding of the present point of view of American medicine toward the development of such programs.

Did the San Francisco action, in effect, reverse the previous and long-established position of the Association? This is a question that is being asked. In order to remove any doubt about the matter, I should like to suggest that the House give consideration at this session to reviewing the action taken earlier this year for the purpose of clarification. In my judgment, such a review now would be most timely.

Presented at the Fourth Annual Clinical Session, American Medical Association, Cleveland, Dec. 5-8, 1950.

THE A. M. A. ADVERTISING PROGRAM

Since our annual session last June in San Francisco, the main development in the National Education Campaign has been the nation-wide October advertising program, which this House of Delegates approved unanimously at the annual meeting.

I am proud and happy to report that the decision which you made last June has been more than justified by subsequent events. That decision has enabled American medicine to make history in the field of public relations and advertising, as well as in the realm of public affairs and government.

A printed, detailed report on the results of the advertising campaign will be distributed later this week during the clinical session here in Cleveland. Today, however, I do want to give you a brief preview of some of the highlights in our advertising success.

The campaign marked the first time in the history of the United States that a profession, business or industry, under government attack, has been successful in rallying nationwide advertising support from thousands of unrelated groups, companies and individuals.

That unselfish, spontaneous support came from more than 65,000 individuals, firms and associations, with the vast majority located in the small cities and small towns of America. They represented not "big business" but the "grass roots" life of the nation.

Those 65,000 new-won friends of our profession, reaffirming their faith in the American way of life, spent more than $2,000,000 in a two week period, or nearly twice as much as the A. M. A. itself, in support of medical freedom. For that practical assistance and splendid vote of confidence, we should be deeply grateful to the merchants of Main Streets all over America.

Today, as a result of the tremendous impact of our advertising campaign, all the nation knows that American medicine does not stand alone. Thousands of allies have taken public stand beside us.

Major public issues still are resolved by the millions of men and women in this country with a strong sense of independence and responsibility, who think things through and speak their minds. The voice of the men and women who live on Main Street is the compelling voice of America—and it has spoken once again.

THE NOVEMBER ELECTIONS

The people of America also spoke in November, at the polling places of the nation. The election results last month were heartening and reassuring to the medical profession, which has been fighting a nonpartisan fight not only against compulsory health insurance, and against the broad trend toward socialism in America, but for the preservation of this nation's traditional way of life.

Neither the American Medical Association nor the state and county medical societies took part in political activities aimed at the election or defeat of individual candidates. But thousands of doctors and their wives, exercising their rights as individual citizens, did take an active part in election activities in many areas of the country. And let us be thankful that they did.

I have nothing but praise and commendation for all doctors —regardless of their party affiliations—who as American citizens played their rightful role in public affairs, and who fought for their convictions at the polls.

The November elections brought defeat to a number of the most outspoken advocates of compulsory health insurance, and also to a number of candidates who hedged on the issue. The elections also provided a general repudiation of the over-all trend toward state socialism.

I think we can say at this point, in view of the events of the past several months, that the majority of the American people agree with the stand of the medical profession, and that any compulsory health insurance bill in Congress today would go down to defeat by at least a 2 to 1 vote.

But let me close this report with a note of warning. We still have much work to do before all the basic issues confronting us are finally resolved. To relax now, under the delusion that we already have achieved complete victory, would be to invite a renewed attack by the socializers at a later date. We cannot afford to relax either our vigilance or our effort.

SOCIALIZED MEDICINE IS NO BARGAIN

WILLIAM L. HUTCHESON
General President, United Brotherhood of Carpenters & Joiners of America

I am against socialized medicine. So is the organization which I have the honor of heading. At the Twenty-Sixth General Convention of the United Brotherhood of Carpenters and Joiners of America, held in Cincinnati last September, 1,300 delegates, representing better than 54 per cent of the total membership, voted down a resolution to support the national health program. This probably does not jibe with the feelings of a good deal of the rest of the labor movement, because much of the pressure for "free" medical care is coming from labor organizations. But it does reflect my sentiments and the sentiments of our recent convention.

Saving a dollar has never been distasteful to me. In fact, I like to get as much for my money as the next man. That is one of the reasons why I oppose socialized medicine. It is no bargain. It looks cheap the way the backers present it, but when you dig down under the fancy layer of propaganda frosting you find that it can be mighty expensive. The British people have already discovered this fact. The July issue of *International Labour Review*, official publication of the International Labour Office, contains some very interesting data on the operation of the national health service in Britain. I quote a few lines of that report:

"The total (gross) cost of the National Health Service in 1948-1949, the first year of operation, greatly exceeded the original estimate. This was £265,000,000, as against a revised estimate of £368,000,000, with a net cost to the taxpayer of £278,000,000. The revised estimate for the year 1949-1950 was £450,000,000, as against an original estimate of £352,000,000. For 1950-1951 the cost is estimated at £484,000,000; in 1946, when the bill was passed, the service was believed to cost £167,000,000 a year."

In case you don't know what the International Labour Office is, I can best explain its functions by quoting a bit from its preamble:

"The International Labour Office is an association of nations, financed by Governments and democratically controlled by representatives of Governments, of management and of Labour organizations.

"Its purpose is to promote social justice in all countries of the world. To this end it collects facts about labour and social conditions, formulates minimum international standards, and supervises their national application."

The ILO's publication, *International Labour Review*, is published in the United Kingdom. As an international organization, ILO's findings are supposed to be strictly impartial.

Getting back to the report; if I read it correctly, service that was supposed to cost £167,000,000 per year when the plan was set up in 1946 costs £484,000,000 per year, and the end is not yet in sight. By my old-fashioned kind of arithmetic that is an increase of better than 345 per cent, and I am sure my poor old mother, who always made a dime do the work of a quarter, would not consider that kind of proposition any bargain.

I know! I know! The socialists claim that money is of no consequence in the matter of national health; getting the poor the same quality and quantity of medical care as the rich can get under private enterprise is the advertised objective of the

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Read before a Joint Meeting of the A. M. A. House of Delegates and the Third Annual Conference of the National Education Campaign, Cleveland, Dec. 7, 1950.

National Health Program. That sounds fine, too; but on page 57 of the ILO report, I find the following sentences:

"A survey of the distribution of doctors by boroughs shows that certain wealthier districts (of London) have an average of one doctor for 1,261 patients, while in the inner East End there are 2,472, or twice as many patients, per doctor. For a group of southern boroughs, the average is 2,897."

If that isn't the "one horse and one rabbit" recipe transferred from the meat pie maker's kitchen to the national health program, then I need new reading glasses. I have tried to figure it from all angles, but the answer I always come up with is that the lumbago, shingles and bellyaches of London's South Siders get only half the attention that similar ailments get in the swankier districts. For all the planning that has been done, there is still an uneven distribution of doctors in London. If the backers of the national health program are to achieve their objective of equal health protection for all, the next step must be to tell doctors when and where and how they are to practice. Therein lies my greatest fear of socialization.

Socialization and death have one thing in common; you cannot be either a little bit socialized or a little bit dead. It is whole hog or nothing. After two years of the national health program, London doctors still have preferences as to where they want to practice. By compulsion of one kind or another, somebody is going to have to shoo doctors away from the fancier neighborhoods into the tenement districts or the program will wind up where it started. When the government is given authority to tell one group or one profession where and how its members are to work, no other group or profession can be safe for long.

If the day ever comes to America when Uncle Sam usurps the power to dictate to doctors under a health plan, it will be a sad day for carpenters. Adequate housing is still an unsolved problem in this country, especially for the poor. If it is logical to nationalize the medical profession to get more medical service for the poor, it is equally logical to nationalize the home construction industry to get roofs over the heads of the lower income groups.

I do not know much about doctors, but I know quite a bit about carpenters. They are an independent lot. They want to work where and how they please. The first bureaucrat who told a carpenter he had to work in Little Rock when he wanted to work in Lancaster would be gumming his food for lack of teeth. Carpenters want to be free agents; free to work where they want to; free to negotiate the terms of their wages and working conditions through collective bargaining; yes, even free to leave the industry and try their luck at something else if the spirit moves them.

They will retain these freedoms only so long as all other groups retain them too. Socialization is like a wolf with a tapeworm; once it starts gnawing, it never can stop. Socialized medicine would only be the first bite out of our free enterprise system; it would not be many years before the carpenters would be feeling the teeth of socialization on the seats of their overalls. Anyway you look at it, socialized medicine is no bargain and the carpenters want none of it.

I know that the backers of the national health plan in this country resent the term "socialized medicine." They have all sorts of arguments to "prove" that doctors and patients will remain free as the air under their program. They make a strong case. Perhaps if human nature were less ornery and less avaricious, an idealistic health program might work out all right. But so long as people have preferences, so long as Park Avenue has more appeal than Hell's Kitchen, there will be an uneven distribution of doctors under any plan that does not contain compulsion. And once compulsion enters the picture, the rights and freedoms of all citizens stand in jeopardy. To me, it is as simple as that. For 40 years I have fought communism tooth and toe nail because I do not want anyone pushing me around. I certainly do not want to put my head into a socialization noose voluntarily when the results can be as undesirable as communism.

I have always respected the medical profession for the fine contribution American medicine has made to human welfare. As I watched your battle against regimentation during the past two years, I have added to that respect. The physicians of this country have shown that they are willing to fight for their convictions. I salute you today not only as doctors but as crusading citizens as well. We in the labor movement have our own cross of regimentation to bear. The fight you are making is part of the same war. It is a war against concentration of authority in a few hands in Washington. As a veteran of 40 years in the labor movement, I know what it is to fight for human rights. I am happy to take my stand beside you.

THE SCIENTIFIC EXHIBIT

Atlantic City Session June 11-15, 1951

Each Section of the Scientific Assembly has elected a representative to the Scientific Exhibit for the Atlantic City Session, June 11-15, 1951, as follows:

Section on Internal Medicine, Dr. Wesley W. Spink, University Hospital, Minneapolis 14.

Section on Surgery, General and Abdominal, Dr. Walter G. Maddock, 250 East Superior Street, Chicago.

Section on Obstetrics and Gynecology, Dr. Frederick H. Falls, 1853 West Polk Street, Chicago 12.

Section on Ophthalmology, Exhibit Committee, Dr. Georgiana D. Theobald, 715 Lake Street, Oak Park, Ill., Chairman; Dr. Donald J. Lyle, 601 Union Trust Building, Cincinnati 2, and Dr. Phillips Thygeson, 87 North Sixth Street, San Jose, Calif.

Section on Laryngology, Otology and Rhinology, Dr. Francis W. Davison, Geisinger Memorial Hospital, Danville, Pa.

Section on Pediatrics, Dr. F. Thomas Mitchell, 376 South Bellevue Boulevard, Memphis 4, Tenn.

Section on Experimental Medicine and Therapeutics, Dr. Robert W. Wilkins, Evans Memorial Hospital, 65 East Newton Street, Boston.

Section on Pathology and Physiology, Dr. F. W. Konzelmann, 1711 New York Avenue, Washington 6, D. C.

Section on Nervous and Mental Diseases, Dr. Leon J. Whitsell, 909 Hyde Street, San Francisco 9.

Section on Dermatology and Syphilology, Dr. James R. Webster, 122 South Michigan Avenue, Chicago 3.

Section on Preventive and Industrial Medicine and Public Health, Dr. Paul A. Davis, 1436 Delia Avenue, Akron, Ohio.

Section on Urology, Dr. Roger W. Barnes, 1216 Wilshire Boulevard, Los Angeles.

Section on Orthopedic Surgery, Dr. Robert J. Joplin, 1180 Beacon Street, Boston 46.

Section on Gastro-Enterology and Proctology, Dr. J. P. Nesselrod, 636 Church Street, Evanston, Ill., and Dr. Everett D. Kieffer, The Lahey Clinic, 605 Commonwealth Avenue, Boston.

Section on Radiology, Dr. Richard H. Chamberlain, 3400 Spruce Street, Philadelphia.

Section on Anesthesiology, Dr. Scott M. Smith, 325 Eighth Avenue, Salt Lake City.

Section on General Practice, Dr. Charles E. McArthur, 205 East Seventh Avenue, Olympia, Wash.

Section on Diseases of the Chest, Dr. Edwin R. Levine, 109 North Wabash Avenue, Chicago 2.

Section on Physical Medicine and Rehabilitation, Dr. Arthur L. Watkins, Massachusetts General Hospital, Boston 14.

Application blanks for space in the Scientific Exhibit are now available and may be obtained from the Section representatives or the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10.

GOVERNMENT SERVICES

Army

Consultants to Go Overseas in 1951

Thirty leaders of civilian medicine will go overseas for the Army Medical Service during 1951 as consultants to the surgeons of the Army commands and to bring the latest developments in medical science to Army physicians. The European Command will receive 12 consultants, the Far East Command 12 and the Panama Canal Zone six. The scope of the Army's overseas medical consultant program has been reduced in the past two years, since the graduate professional training program has increased the number of medical specialists in the regular Army. Over 200 regular Army medical officers have now been certified by American specialty boards. Each of the 30 consultants who will be assigned to oversea tours must have been certified by the American Board in his specialty, must have had military experience and must be a recognized teacher.

The schedule for the European Command calls for two-man teams, as follows: February, one pediatrician and one obstetrician; April, one surgeon and one internist; June, one neuropsychiatrist and one orthopedist; August, one internist and one obstetrician; September, one surgeon and one neuropsychiatrist, and November, one internist and one orthopedist.

One specialist wil go to the Far East Command each month beginning in January. The schedule calls for an internal medicine consultant in January, May and September, a neuropsychiatrist in February, June and October, a surgeon in March, July and November and an orthopedist in April, August and December. Internists will be assigned to Panama in February, June and October and surgeons in April, August and December. Each consultant, on his return to the United States, will submit a report and recommendations to the Surgeon General as to administration and treatment, which will also serve as a check on the observations of the Army's own medical specialists.

Decentralize Appointments for Medical Draft Registrants

The inauguration of a decentralized system of reserve officer appointments, which will expedite action on applications made by draft-eligible physicians, dentists and veterinarians, has been announced. Under the new system, the entire processing of reserve commissions will be accomplished in the six Continental Army areas and overseas commands for applicants now enrolled under the current draft call. Commissions will be issued by Army commanders and overseas commanders to applicants who qualify without referral to the Department of the Army. For those subject to induction by Selective Service, the following procedure will be followed:

Initially, the registrant will fill out a questionnaire that will include a statement as to whether he desires to accept a commission. This questionnaire will accompany him to his local induction station when he reports for his physical examination. At that time he will be given another opportunity to indicate his willingness to accept a commission, if he has not previously so indicated. Records will then be forwarded to the appropriate Army headquarters where the qualifications of the registrant will be determined. If the registrant is qualified, the Army commander will send him a letter of appointment in an appropriate grade in the Medical, Dental or Veterinary Corps Reserve, with instructions to complete an oath of office within 72 hours and notify his Selective Service Board of his commissioned status. Physicians and dentists accepting commissions under these circumstances will receive the special $100 authorized pay for volunteers.

Awards and Commendations

CAPT. WARREN H. BRUNE

The Silver Star was recently awarded to Capt. Warren H. Brune, formerly of St. Louis, "for gallantry in action against the enemy at Kumchon, Korea." On August 2, 1950, Battery B of the 99th Artillery Battalion, to which he was attached, was subjected to enemy artillery and mortar counter battery fire, which inflicted severe casualties. As the shelling continued Captain Brune, disregarding his own safety, moved an ambulance into the battery position and directed evacuation of the wounded. As the ambulance was being loaded he rendered medical treatment throughout the area although continually exposed to shellfire. When the battery was withdrawn to a more tenable position, he effected the complete evacuation of all dead and wounded personnel.

CAPT. GENE E. LAM

The Bronze Star Medal with "V" device was recently awarded to Capt. Gene E. Lam, formerly of Glenrock, Wyo., "for heroic achievement on August 12 in the vicinity of Kang-Ni, Korea," when a Battalion Aid Station was subjected to enemy artillery fire. Captain Lam aided in the evacuation of wounded patients to safety, moving through continuous artillery fire in order to accomplish this mission. He returned to the building that housed the aid station to remove critically needed medical supplies and discovered three wounded men still in the building. He immediately started emergency treatment, removing two patients from the building and administering plasma to the third. Enemy artillery continued to fall on the building during the treatment of this last patient. Only when the treatment was completed and the patient could be moved did Captain Lam leave the building with his patient.

CAPT. WILLIAM O. HEDBERG

The Bronze Star Medal was recently awarded to Capt. William O. Hedberg, formerly of Fort Atkinson, Wis., "for heroic achievement near Kumchon, Korea, on September 25." During an attack by Company A, 5th Regiment, when casualties were mounting, he left his position of relative safety and moved into the open in order to care for the wounded. Under intense fire from tanks, mortars and machine guns, he went about his task with utter disregard for his own safety. His coolness under fire instilled courage in the wounded, and his heroic actions were an inspiration to those fighting about him.

Navy

Ships Doctors Wanted

The Military Sea Transportation Service, Atlantic, is accepting applications for civilian positions of ships doctors aboard Navy transports. These transports are operated by the Navy for the International Refugee Organization in connection with the resettlement of displaced persons from Europe to various countries throughout the world. Doctors who are accepted for such employment join their ships at New York and sail for Europe and thence to various ports throughout the world. Voyages generally are of 90 days' duration with vessels returning to New York. The salary is $6,350 per annum plus maintenance. Applicants may apply for one or more voyages and are not bound to serve beyond one voyage. Applicants are required to have a current license to practice medicine or surgery issued under the authority of a state or territory of the United States or the District of Columbia, to be graduates of an approved school of medicine and to have completed at least one year of general rotating internship. Candidates must be United States citizens and be available to leave on short notice. Minimum age requirements are 25 to 55. Information may be obtained from the Employment Branch, Industrial Relations Division, Military Sea Transportation Service, Atlantic, Fifty-Eighth Street and First Avenue, Brooklyn 20.

MEDICAL NEWS

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ALABAMA

Dr. Gorgas Named to Hall of Fame.—Dr. William Crawford Gorgas, who destroyed breeding places of yellow fever mosquitoes in the Panama Canal Zone and thus made possible the building of the canal, was elected in November to the Hall of Fame for Great Americans at New York University. He was one of six elected from 186 nominated by private citizens throughout the country. These elections are held every five years. Only seven can be added in any one election, and candidates must have been dead at least 25 years. Only six nominees received the necessary majority in the 1950 election. Dr. Gorgas, an officer of the Army Medical Corps, attained the rank of surgeon general. The Gorgas Memorial Institute of Tropical and Preventive Medicine, Washington, D. C., and the Gorgas Memorial Laboratory of Tropical Research in Panama were established in his honor.

CALIFORNIA

Prosthesis Institute.—An institute on upper extremity prosthetics will be held on the Los Angeles campus of the University of California January 22-26. The purpose of the conference is to demonstrate the technics of fitting, equipping and harnessing upper extremity prosthetics. For information address the Department of Institutes and Lectures, University of California Extension, Los Angeles 24.

COLORADO

Limited Private Practice for Faculty Members.—Delegates to the annual meeting of the Colorado State Medical Society have approved a set of principles under which salaried physicians of the University of Colorado School of Medicine will be permitted to accept a limited amount of private practice. At Reference Committee hearings Director Ward Darley stated that salaried professors should accept only patients referred to them by colleagues in private practice. Off-campus offices and private hospitals would be used for this added activity of "full time" faculty members. Salaries would be properly adjusted, enabling the medical school to save enough to help increase the incomes of preclinical faculty members. Regents and the medical school administration plus an advisory committee of private practitioners and clinical and preclinical faculty members are to work out details of procedure.

DELAWARE

State Medical Election.—At the October meeting of the Medical Society of Delaware the followng officers were elected for 1951: Dr. Charles E. Wagner, Wilmington, president; Dr. Ervin L. Stambaugh, Lewes, president-elect; Dr. Benjamin F. Burton Jr., Dover, vice president; Dr. Andrew M. Gehret, Wilmington, secretary, and Dr. Joseph M. Messick, Wilmington, treasurer.

FLORIDA

Midwinter Seminar.—The fifth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held again at Miami Beach, January 15-20. The lectures on otolaryngology will be presented on January 15, 16 and 17 and those on ophthalmology on January 18, 19 and 20. Lecturers for the courses in otolaryngology will include Drs. Louis H. Clerf, Philadelphia; Gordon D. Hoople, Syracuse; Dean M. Lierle, Iowa City; Benjamin Spector, Boston, and George Shambaugh, Chicago. Ophthalmologists who will lecture include Conrad Berens, New York; Raymon Castroviejo, New York; Jack S. Guyton, Baltimore; Harold G. Scheie, Philadelphia, and Edmund B. Spaeth, Philadelphia.

The university will be host January 17 to the Southern Section meeting of the American Laryngological, Rhinological and Otological Society. Among the speakers at this meeting will be Dr. Chevalier L. Jackson of Philadelphia. On Wednesday evening all registrants are invited to attend the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology meeting concurrently with the seminar. A certificate of attendance to this convention will be issued for deduction purposes.

ILLINOIS

Hospital News.—St. Francis Hospital, Evanston, celebrated its golden anniversary October 10.—Ceremonies dedicating a new addition to the Rockford Municipal Tuberculosis Sanatorium were held October 3, with Governor Adlai E. Stevenson giving the principal address. With the new addition the sanatorium will have a capacity of 104 beds, providing treatment for tuberculosis patients in all stages of the disease. The building was constructed at a cost of about a million dollars.

Chicago

Fellowships in Pediatric Cardiology.—The pediatric cardiology department of the Children's Division of Cook County Hospital is accepting applications for fellowships for immediate appointment. The department offers large material of both congenital and acquired diseases of the heart; over 500 cases of congenital malformations of the heart have been studied in the past three years. There is a complete department of angiocardiography and catheterization. Salary is commensurate with experience. Information may be obtained from Dr. Rowine H. Brown, assistant medical superintendent, Children's Division of the Cook County Hospital, 700 South Wood Street, Chicago 12.

Chest Physicians and Tuberculosis Society Meeting.—A joint meeting of the Illinois Chapter of the American College of Chest Physicians and the Chicago Tuberculosis Society will be held at the Congress Hotel December 15. Dinner at 6:30 p. m. will be followed by the scientific program at 8:00 p. m. "The Use of ACTH and Cortisone in Asthma" will be discussed by Drs. Samuel M. Feinberg, Thurman B. Dannenberg, Alan R. Feinberg and Saul Malkiel, all of Northwestern University. "Clinical and Laboratory Effects of ACTH and Cortisone on Patients with Pulmonary Tuberculosis" will be presented by Dr. Smith Freeman of Northwestern University and Dr. Jennings Fershing, resident physician at Hines Hospital. All physicians are invited to attend.

INDIANA

University Appointment.—Dr. Paul R. Lurie, research fellow of the National Heart Institute, Bethesda, Md., has been appointed assistant professor of pediatrics at the Indiana University School of Medicine, Bloomington-Indianapolis. Dr. Lurie joined the staff of the Yale University School of Medicine, New Haven, Conn., after military service during World War II. He has been at the national institute for the past two years.

Course for Medical Librarians.—Indiana University is offering a new Bachelor of Science degree in Medical Record Library Science, providing three years of study on the Bloomington campus and one year's study at the university medical center in Indianapolis. The course, to be directed by Miss Gertrude Gunn, head of the department of medical records at the medical center, will qualify graduates for positions as medical record librarians in hospitals where detailed records are maintained on each patient.

KENTUCKY

Clinic Dedicated to Retired Dean.—The remodeled west wing of the Louisville General Hospital is now officially known as the John Walker Moore Clinic in honor of Dr. Moore, retired dean of the University of Louisville School of Medicine. At the dedicatory services Dr. Moore was paid tribute by his friends and associates.

Medical Scholarship Fund.—The Board of Trustees of the Rural Kentucky Medical Scholarship Fund held a meeting October 29 at Mammoth Cave and approved eight students for financial assistance to further their medical education, if and when they obtain admission to accredited medical schools. Two students already in medical school were granted loans. The money available for loans approximating $150,000 was raised by subscription in 1946 and 1947. Up to the present time 92 loans totaling $63,900 have been granted to 49 students. Of the 13 graduates, five are interns, seven are practicing in rural communities and one is in the Navy.

MAINE

State Journal Honors Dr. Higgins.—The October issue of the *Journal of the Maine Medical Association* is dedicated to Dr. Everett C. Higgins of Lewiston, who for the past 30 years has practiced medicine in central Maine and has contributed greatly to the development of the Central Maine General Hospital. Earlier the hospital honored him at a birthday dinner.

MARYLAND

Dr. Sayers Joins Baltimore Health Department.—Dr. Royd R. Sayers, formerly a medical director in the U. S. Public Health Service, was appointed on September 20 to a new part time post in the Baltimore City Health Department that was established by the Board of Estimates to strengthen the city's control of occupational diseases. Dr. Sayers comes to Baltimore after being on the U. S. Public Health Service staff since 1913. From 1940 to 1947 he was assigned to serve as director of the Bureau of Mines.

MASSACHUSETTS

Health Protection Clinic.—Of the first 2,000 "apparently healthy" persons screened at Boston's Health Protection Clinic, a total of 1,266, or 63 per cent, were referred to their family physicians for both known and unknown conditions, and of this total, 1,117 were referred for previously unknown physical defects. The clinic was opened at the New England Center Hospital in Boston in December 1949. Sponsored by the Massachusetts Medical Society and financed by the state health department, the clinic provides free screening for heart disease, cancer and high blood pressure. Dr. Claire F. Ryder, Boston, state health department, is administrator. Of the 1,730 conditions discovered at the clinic, the major category was obesity, defined as being more than 20 per cent above the ideal weight. Poor vision accounted for 212 defects. Among the more serious ailments were heart disease (159 cases), diabetes (47), tuberculosis (17), syphilis (8), high blood pressure (173), kidney disease (10) and hearing defects (140). Reopened on October 3, the health protection clinic is now receiving requests for appointments. Information may be obtained from Dr. Claire F. Ryder, New England Center Hospital, Boston 11. The telephone number is Liberty 2-2855.

MISSOURI

Grant for Cancer Teaching and Research.—Washington University School of Medicine, St. Louis, in October received a check for $39,000 from the American Cancer Society for continuation of the program of cancer teaching and research through Aug. 31, 1951. In addition to the institutional grant, Washington University is the recipient of grants-in-aid to the amount of $36,992 and fellowships totaling $5,800, bringing the total amount of financial assistance of the American Cancer Society to Washington University this year to $81,792.

University Appointment.—Dr. Walter G. Rice has been appointed assistant professor of pathology and associate director of clinical pathology for the St. Mary's Group of Hospitals of the Saint Louis University School of Medicine. Dr. Rice will work with Dr. Henry Pinkerton, director of the department of pathology at Saint Louis University, and Dr. Raymond O. Muether, director of clinical pathology at the St. Mary's Group of Hospitals. Dr. Rice comes to the university from Texas, where he was assistant director of laboratories at Baylor University Hospital and instructor in clinical pathology at Southwestern Medical School of the University of Texas, Dallas. After five years' war service he was assistant to the national director of the Canadian Red Cross and Blood Transfusion Service.

NEW JERSEY

Personal.—Dr. Nolan D. C. Lewis, director of the New York State Psychiatric Institute and Hospital, New York, has been named chairman of the Committee on Mental Health for the State Charities Aid Association.

Executive Secretary to Head Medical Service Plan.—Mr. James E. Bryan, Trenton, who has been the Medical Society of New Jersey executive secretary since 1947, has been appointed administrator of the Medical-Surgical Plan of New Jersey, the "Blue Shield" medical care plan, effective November 1. He will have charge of the administrative details of the plan as well as its relations with physicians and the public in all nonprofessional matters. Mr. Bryan has been engaged in medical society executive, editorial and public relations work for 18 years in New York and New Jersey.

NEW YORK

Whipple Auditorium Dedicated.—More than 250 graduates of the University of Rochester School of Medicine and Dentistry attended ceremonies at Strong Memorial Hospital October 12 dedicating an amphitheater of the medical school as "George H. Whipple Auditorium." Dr. Whipple has been dean of the school since it was founded 25 years ago. The ceremonies were part of a three day medical program of the school's alumni association.

Preconception Clinic.—A new clinic for the "preconception" treatment of couples who have histories of unsatisfactory pregnancies has been established at the Syracuse Dispensary. Three categories of patients are being treated: (1) patients with histories of previous premature labors, (2) chronic aborters and (3) patients with histories of congenitally defective offspring. Both husband and wife are thoroughly studied to ascertain correctable pathological conditions. Indicated therapy will then be instituted to correct such conditions prior to conception. It is hoped that this pilot study will lead to methods that may be generally employed in private practice. The clinic is a joint venture of Syracuse University College of Medicine and the Syracuse Department of Health. It is sponsored by the Bureau of Maternal and Child Health of the New York State Department of Health. It has the approval of the Maternal Welfare and Infant and Child Health Committees of the Onondaga County Medical Society as well as the Central New York Obstetrical and Gynecological Society. Miss Nancy Cochrane, tenth floor, Memorial Hospital, is in charge of appointments.

New York City

Dr. Rusk Gives Hauswirth Lecture.—The second annual Louis Hauswirth Lecture in Medicine, sponsored by the Beth David Hospital Alumni Association, was given by Dr. Howard A. Rusk, director of the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, November 29 at the Beth David Hospital, on "A Dynamic Approach to Medicine's Number One Problem."

New York Diabetes Association.—At its annual meeting on November 10 the New York Diabetes Association made Dr. Henry Dolger of Mount Sinai Hospital its president, Dr. Herbert Pollack, secretary, and Mr. David Handman, treasurer. The association provided a one month vacation for 154 children at its camp last summer; 20 of the staff also were diabetic. This year four new cabins, accommodating 10 children and two counselors each, were constructed for girls. Many improvements were made, including new docks for the boats and canoes, a new medical building for the administration of insulin and a new laundry building.

Grant to Train Plastic Surgeons.—A grant of $27,000 from the Milbank Memorial Fund to train plastic surgeons has been made to New York University-Bellevue Medical Center. This is the last of the fund's several grants to the Medical Center intended to promote the rehabilitation of handicapped persons. The plastic surgery grant will make possible three fellowships for the training of young surgeons in the plastic surgery unit, under the direction of Dr. John M. Converse. In its research and training program the plastic surgery unit is working in close association with the medical center's Institute of Physical Medicine and Rehabilitation, to which the Milbank Memorial Fund has also made contributions.

Physicians Art Club.—At the seventeenth annual dinner meeting of the New York Physicians Art Club, November 6, Dr. Benjamin F Morrow was elected president, Dr. Solomon Fineman vice president and Dr. William Snow secretary-treasurer. It is hoped that many more physicians will participate in the activities of the club. The recent exhibition of work of the art club members, held at the Academy of Medicine, was of exceptionally high caliber. Oils, watercolors, sculpture and photography were the main mediums represented. Membership is open to all New York physicians. Those interested may join by paying $5 dues to the secretary-treasurer, Dr. William Snow, 941 Park Avenue, New York.

House Staff Educational Program.—Dr. Frode Jensen has been appointed director of the House Staff Educational Plan of the New York Committee on the Study of Hospital Internships and Residencies, which is sponsored by all six medical schools in New York. He succeeds Dr. Stuart W. Cosgriff in the educational program developed for nonteaching hospitals by the committee through a grant from the Commonwealth Fund. The House Staff Educational Plan, endorsed by the New York Academy of Medicine and the Coordinating Council of the Medical Societies of all the counties of New York City, now is self sustaining and continues to provide a strong educational stimulus for the training of staff members

in the field of medicine in those hospitals not affiliated with the local medical schools. Dr. Jensen, newly appointed assistant dean of New York University Post-Graduate Medical School, recently completed three years as director of the Office of Graduate and Postgraduate Medical Education at the University of Colorado School of Medicine, Denver.

OHIO

Dr. Ransohoff Retires.—After 45 years of volunteer teaching in the University of Cincinnati College of Medicine, Dr. J. Louis Ransohoff has retired under the university's automatic retirement rule. He will remain in practice. The university board of directors has granted him the honorary faculty title of clinical professor emeritus of surgery.

Taylor Memorial Fund.—A committee has established the Lester H. Taylor Memorial Fund for the purpose of receiving gifts from Dr. Taylor's friends. The fund is directed toward strengthening the financial security of the museum. Friends and patients have contributed about $30,500, which will eventually be devoted to an appropriate memorial to the late Dr. Taylor, the museum's first president.

VERMONT

University Appointments.—Dr. William E. Brown, dean of the University of Vermont College of Medicine, Burlington, has been appointed to serve as staff associate with the Survey of Medical Education, Inc., on a part time basis. He will remain at the college. Dr. Theodore H. Harwood, associate professor of medicine at the college, has been appointed assistant dean. Dr. George A. Schumacher, New York, has joined the faculty of the college of medicine as professor of neurology. He was formerly on the faculty of Columbia University College of Physicians and Surgeons, New York.

WISCONSIN

Cerebral Palsy Clinic.—The Cerebral Palsy Clinic of the Medical Society of Milwaukee County opened in October in offices in the Goodwill Industries Building in Milwaukee. The medical director is Dr. Raymond C. Waisman. The clinic is open Monday morning, Wednesday afternoon and Friday morning. An occupational and a physical therapist are full time employees. They came to the clinic after taking a specialized postgraduate course of cerebral palsy training with Dr. Winthrop M. Phelps at Cockeysville, Md.

PUERTO RICO

Annual Medical Meeting.—The annual assembly of the Medical Association of Puerto Rico will be held December 12-17 with headquarters at the association building, Avenida Fernández Juncos-Parada 19, Santurce, under the presidency of Dr. A. Oliveras-Guerra. The first day will be devoted to papers on cancer. Guest speakers are as follows:

Brewster Miller, New York, Opening Remarks.
C. Langdon Parsons, Boston, Present Concepts of Cancer of the Cervix.
Juan A. Del Regato, Colorado Springs, Colo., Indications for Radiotherapy of Cancer.
Grantley W. Taylor, Boston, Management of Regional Lymph Node Metastases.
Wilburt C. Davison, Durham, N. C., Cancer in Childhood.
Douglas H. Sprunt, Memphis, Tenn., Evaluation and Application of Tests for the Diagnosis of Cancer.

The program is being given under the auspices of the Puerto Rico Chapter of the American Cancer Society, the insular department of health and the association. The Wednesday morning program will be a symposium on the Practical Applications of the Newer Drugs, ACTH and Cortisone.

At the Thursday session, planned in cooperation with the Puerto Rico Chapter of the American College of Chest Physicians, the invited speakers will be:

Pedro Domingo, Havana, Cuba, Newer Aspects on the Defense of the Body Against Bacterial Infection.
Louis H. Clerf, Philadelphia, The Esophagus and Its Diseases.

Other guest speakers at the sessions include:

Frank H. Lahey, Boston, Management of Diseases of the Thyroid.
Leo Meyer, New York, Medical Aspects of Nuclear Energy.
L. Kraeer Ferguson, Philadelphia, Surgical Aspects of Ulcerative Colitis and Regional Enteritis.
Henry L. Bockus, Philadelphia, Treatment and Prognosis in Hepatic Cirrhosis.
Leonard J. Piccoli, Ph.D., New York, Recent Developments in Vitamin B12 Therapy.
Paul Gyorgy, Philadelphia, News from the Nutritional Front.
Howard A. Rusk, New York, Rehabilitation in Chronic Diseases.
Lewis C. Scheffey, Philadelphia, Diagnosis and Management of Pelvic Malignancy.
Reed M. Nesbit, Ann Arbor, Mich., Results of Endocrine Therapy of Prostatic Cancer: Diagnostic Implication of Serum Phosphatase Determinations.

The annual banquet and dance will be held Saturday at 8:00 p. m. at the Hotel Condado. There will be technical exhibits.

GENERAL

Postgraduate Medical Studies in Britain.—Dr. Julian Landman of London, a leading authority on British postgraduate medical education, will be in the United States and Canada in December and January. His address in New York will be the Waldorf-Astoria Hotel, during December. American doctors contemplating postgraduate study in Britain are advised to contact Dr. Landman.

ACTH Conference.—The second clinical conference on pituitary adrenocorticotropic hormone, planned by Armour and Company, Chicago, is being held at the Palmer House, Chicago, December 8-9. This conference brings together some 300 men and women who have been testing the hormone in various disease conditions and seeking data on its mode of action. A total of 95 papers will be presented. The reports come from leading clinics in all parts of the United States and from England, France, Canada, Mexico and Australia.

Dr. Cori Wins Borden Award.—Dr. Gerty F. Cori, Washington University School of Medicine, St. Louis, received the Borden Foundation award for outstanding medical research at the meeting of the Association of American Medical Colleges at Lake Placid, New York, in October. The award goes annually to a staff member of an American medical college for outstanding and significant work in medical research. Dr. Cori received it for her discovery of a new enzyme. She and her husband, Dr. Carl T. Cori, were Nobel Prize winners in 1947 for their work in carbohydrate chemistry.

International Symposium on Steroids.—A symposium on steroids will be held in Cuernavaca, Mexico, January 15-18, under the auspices of a committee of industrial and institutional scientists. Membership is limited by invitation to persons nominated either by the committee from the United States or by the Mexican subcommittee. The proceedings of the conference will be recorded and will be published as rapidly after the close of the sessions as possible.

The sponsoring committee comprises Dr. Konrad Dobriner, Sloan-Kettering Institute for Cancer Research, New York; Dr. Paul Holbrook, Tucson, Ariz.; Gregory G. Pincus, Sc.D., Worcester Foundation for Experimental Biology, Shrewsbury, Mass.; Dr. Edward C. Reifenstein Jr., Research Institute, Oklahoma Medical Research Foundation, Oklahoma City; I. V. Sollins, Chemical Specialties Co., Inc., New York, and Syntex S. A., México, D. F. The invited group includes clinical workers in rheumatology, cancer and other diseases, as well as experimental workers in the fields of biology, biochemistry and pharmacology.

Prize in Public Health Methodology.—Annual recognition in the form of a $500 award and a plaque will be made available next year for outstanding work in methodology research. The prize, to be known as the Kimble Glass Methodology Research Award, is to be given by the Conference of State and Provincial Public Health Laboratory Directors and is endowed by Kimble Glass, Division of Owens-Illinois Glass Company. Its purpose is to give recognition and reward to a person who has contributed outstandingly in developing a new or better method of procedure in the field of public health work. Methodology research has to do with the devising of methods of applying scientific knowledge in the solution of medical and public health problems. Selection of the outstanding work and awarding of the prize will be under the direction of an award's committee, which includes Samuel R. Damon, Ph.D., director of laboratories, Indiana State Department of Health, Indianapolis; Dr. Malcolm Merrill, director of laboratories, California State Department of Health, Berkeley; Francis C. Lawler, Sc.D., director of laboratories, Vermont State Department of Health, Burlington; Martin Frobisher, Sc.D., chief of bacteriology, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.; Dr. Geoffrey Edsall, professor of bacteriology, Boston University School of Medicine, and Dr. Albert V. Hardy, director of laboratories, Florida State Board of Health, Jacksonville.

Inter-American Congress on Brucellosis.—The Third Inter-American Congress on Brucellosis, held in Washington, D. C., November 6-10, was attended by nearly 200 delegates and observers from 22 countries and possessions, including 10 countries of Latin America, and from 28 states and the District of Columbia in the United States, as well as from two specialized agencies of the United Nations. The delegates to the congress discussed developments in the diagnosis of brucellosis and its prevention through vaccination of animals. Although only 4,000 to 6,000 cases of human brucellosis are reported annually in the United States, it is estimated by experts that there are probably 40,000 to 100,000 new cases of brucellosis annually in the United States. Because of the lack of standardization of diagnostic technics and the many forms that the disease may

take, the great majority of cases are not at present discovered. It was announced that the two United Nations agencies concerned with the problem of brucellosis, WHO and FAO, have organized brucellosis centers in eight countries in Europe, South Africa and Australia and are planning similar centers in the United States, Mexico, two South American countries and India.

Officers elected at the congress are Dr. Wesley W. Spink, Minneapolis, president, and the following vice presidents: Dr. Enso Criscuola, Argentina; Dr. Maxilmiliano Ruiz Castaneda, Mexico; Dr. Genesio Pacheco, Brazil; Leslie M. Hutchings, D.V.M., Lafayette, Ind.; C. H. Mitchell, Canada, and Dr. Birdsall N. Carle, Bethesda, Md.

The first international Expert Panel on Brucellosis was held November 11-13. It was arranged jointly by FAO and WHO and was composed of 26 members and six observers representing 11 countries. Sir Weldon Dalrymple-Champneys, deputy chief medical officer of the United Kingdom Ministry of Health, London, was elected chairman. Dr. Castaneda, of the General Hospital in Mexico City, and Dr. Hutchings, department of veterinary medicine, Purdue University, Lafayette, Ind., were elected vice chairmen.

CORRECTION

Pancreatic Glucagon.—In the abstract on this subject in THE JOURNAL of Nov. 25, 1950, page 1131, the second word in line 23 and the first word in line 24 should have been "sugar," not "presssure."

National Advisory Neurological Diseases and Blindness Council.—The Scientific Reports Branch of the National Institutes of Health, Bethesda, Md., writes that owing to an error on their part, Dr. Percival Bailey, of the University of Illinois Medical College, was announced as a member of this council. This announcement was published in THE JOURNAL Nov. 25, 1950, page 1100.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

ARIZONA: * *Examination.* Phoenix, Jan. 17-19. *Reciprocity.* Phoenix, Jan. 20. Sec., Dr. J. H. Patterson, 316 W. McDowell Road, Phoenix.

ARKANSAS: * *Eclectic.* Little Rock, June 7. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

COLORADO: * Denver, Jan. 3-5, 1951. Exec. Sec., Mrs. B. M. Hudgens, 831 Republic Bldg., Denver.

CONNECTICUT: * *Examination.* Hartford, March 13-14. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, March 13-14. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: Dover, Jan. 9-11. *Reciprocity.* Jan. 18, 1951. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA:* *Reciprocity.* Washington, Dec. 11. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

GEORGIA: Atlanta, June. Augusta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. John Y. Battenfield, Agana.

HAWAII: Honolulu, Jan. 8-11, 1951. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, Jan. 8, 1951. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

ILLINOIS: Chicago, Jan. 9-11. Superintendent of Registration, Mr. Charles F. Kervin, Capitol Bldg., Springfield.

INDIANA: Indianapolis, June 20-22. Exec. Sec., Miss Ruth V. Kirk, 1138 K. of P. Bldg., Indianapolis 4.

KANSAS: Topeka, Dec. 13-14. Sec., Dr. O. W. Davidson, 772 New Brotherhood Bldg., Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 11-13. Sec., Dr. Bruce Underwood, 620 South Third St., Louisville.

MAINE: Portland, March 12-13. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1.

MASSACHUSETTS: Boston, Jan. 23-26, 1951. Sec., Dr. Geo. R. Schadt, 37 State House, Boston.

MINNESOTA: * Minneapolis, Jan. 16-18. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: Jackson, December. Asst. Sect., Dr. R. N. Whitfield, Jackson 113.

MISSOURI: *Examination.* Jefferson City, Feb. 19-21. *Reciprocity.* Jefferson City, Feb. 12. Ex. Sec., Mr. John A. Hailey, Box 4, Jefferson City.

MONTANA: Helena, April 2-4. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEBRASKA:* June 1951. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln.

NEVADA: Carson City, Feb. 5. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

NEW HAMPSHIRE: *Examination.* Concord, March 14-15. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, June 19-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, Syracuse and New York City, Jan. 30-Feb. 2. Sec., Dr. Jacob L. Lochner, 23 S. Pearl St., Albany.

NORTH CAROLINA: *Reciprocity.* Winston-Salem, Jan. 15. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* *Examination.* Oklahoma City, June 6-7. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: * Portland, January 4-6. Sec., Mr. Howard I. Bobbit, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia, January 1951. Acting Secretary, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: *Examination.* Santurce, March 6. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

RHODE ISLAND:* Providence, Jan. 4-5. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: *Reciprocity.* Columbia, Jan. 2, Feb. 6, March 5, April 2. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Jan. 15-16. Sioux Falls, South Dakota. Sec., Dr. C. E. Sherwood, 109 Center St., West, Madison.

TENNESSEE: * *Examination.* Memphis, Dec. 21-22. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

UTAH: Salt Lake City, July 1951. Dir., Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

VERMONT: Burlington, February 1951. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON: * Seattle, January 1951. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

WEST VIRGINIA: Charleston, Jan. 8-10. Sec., Dr. N. H. Dyer, State Capitol, Charleston 5.

WISCONSIN: * River Falls, Jan. 9-11, 1951. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: *Examination.* Cheyenne, Feb. 5. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: *Examination.* Tucson, Dec. 19. Sec., Mr. Francis A. Roy, Room 423, University of Arizona, Tucson.

CONNECTICUT: *Examination.* Feb. 10. Executive Asst., State Board of Healing Arts, Mr. M. G. Reynolds, 110 Whitney Ave., New Haven 10.

DISTRICT OF COLUMBIA: *Examination.* April, 1951. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, June 2. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: *Examination.* Des Moines, Jan. 9. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Jan. 12-13. Sec., Miss Eloise LeBeau, 101 No. Walnut St., Lansing 15.

MINNESOTA: *Examination.* Minneapolis, Jan. 2-3. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: *Examination.* Omaha, Jan. 9-10. Dir., Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

NEW MEXICO: *Examination.* Santa Fe, Dec. 10. Sec., Mrs. Marguerite Cantrell, P. O. Box 1522, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma City, March 27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

RHODE ISLAND: *Examination.* Providence, Feb. 14. Chief, Division of Professional Regulation, 366 State Office Bldg., Providence.

TENNESSEE: *Examination.* Memphis, Dec. 27-28. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis.

TEXAS: *Examination.* Latter Part of April. Sec., Bro. Raphael Wilson, 306 Nalle Bldg., Austin.

WASHINGTON: Seattle, January 1951. Sec., Mr. Edward D. Dohm, Department of Licenses, Olympia.

WISCONSIN: *Examination.* Madison, April 7. Sec., Mr. W. H. Barber, Scott and Watson Sts., Ripon.

* Basic Science Certificate required.

Coming Medical Meetings

American Academy of Orthopaedic Surgeons, Palmer House, Chicago, Jan. 27-Feb. 1. Dr. Harold B. Boyd, 122 S. Michigan Ave., Chicago 3, Secretary.

American Society for Surgery of the Hand, Palmer House, Chicago, Jan. 26. Dr. Joseph H. Boyes, 1401 S. Hope St., Los Angeles 15, Secretary.

International Post-Graduate Medical Assembly of Southwest Texas, Municipal Auditorium, San Antonio, Jan. 23-25. Dr. John H. Hinchey, P. O. Box 2445, San Antonio 6, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-17. Dr. Victor J. Montilla, P. O. Box 3866, Santurce 29, Secretary.

Radiological Society of North America, Palmer House, Chicago, Dec. 10-15. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

DEATHS

MacConnell, John Wilson ✦ Davidson, N. C.; born in McConnellsville, S. C., Jan. 11, 1878; University of Maryland School of Medicine, Baltimore, 1907; formerly vice president of the Federation of State Medical Boards of the United States and member of the board of medical examiners; in 1908 joined the faculty of Davidson College, where he organized the department of biology and where he served as professor of biology, professor of physiology and hygiene and director of the student health service; member of the Southern Medical Association, Military Order of World War, Sigma Alpha Epsilon, Nu Sigma Nu, Phi Beta Kappa and Omicron Delta Kappa; at one time third vice president of the Association of Surgeons of the Southern Railway System; a first lieutenant in the medical corps of the U. S. Army on the Mexican border in 1916; later served with the American Expeditionary Forces during World War I; affiliated with Lowrance Hospital in Mooresville and the Charlotte Eye, Ear, Nose and Throat Hospital in Charlotte; died September 26, aged 72, of uremia.

Bryan, Alanson Leroy ✦ Medical Director, Captain, U. S. Navy, retired, San Diego, Calif.; born March 4, 1892, in Dixon, Iowa; Vanderbilt University School of Medicine, Nashville, Tenn., 1916; was first appointed assistant surgeon in the Naval Reserve in 1916 and was commissioned lieutenant (jg) in the medical corps of the U. S. Navy in April 1917, when he reported for active duty; served at many hospitals in the United States and was medical officer in command of the Naval Hospital at Dublin, Ga., from 1944 through 1945; served on the *USS Fulton, Memphis, Procyon, Chaumont, Medusa, Maryland, Lafayette, Massachusetts* and *Relief;* for services performed aboard the *USS Relief* from December 1942 to March 1944 and as medical officer in command of the Naval Hospital at Dublin was awarded a letter of commendation from the Secretary of the Navy; fellow of the American College of Surgeons; retired Jan. 1, 1947 for physical disability; died in the U. S. Naval Hospital October 12, aged 58, of cerebral hemorrhage and malignant hypertension.

Mentzer, Stanley Herman, San Francisco; born in San Francisco April 9, 1897; University of California Medical School, San Francisco, 1923; entered the Mayo Foundation in Rochester, Minn., as a fellow in surgery in July 1923; left the foundation in July 1926; formerly assistant clinical professor of surgery at the University of California Medical School; specialist certified by the American Board of Surgery; past president and formerly secretary of the San Francisco County Medical Society; fellow of the American College of Surgeons; member of the Royal Society of Tropical Medicine and Hygiene, American Society of Tropical Medicine, the Pan American Medical Association, Osler Medical Association and the International Association of Medical Museums; served on the staffs of San Francisco, St. Joseph's and Hahnemann hospitals; died October 6, aged 53, of cerebral hemorrhage and hypertension.

Patek, Arthur Jackson ✦ Milwaukee; born in Milwaukee Nov. 11, 1868; University of Pennsylvania Department of Medicine, Philadelphia, 1892; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past president of the State Medical Society of Wisconsin, which in 1935 presented its award to him for distinguished service to the society, Medical Society of Milwaukee County and the Milwaukee Academy of Medicine; formerly preceptor in charge, University of Wisconsin Medical School; served during World War I; affiliated with Columbia, Milwaukee and Mount Sinai hospitals; founder and for several years editor of the *Wisconsin Medical Journal;* director of the Milwaukee Orchestral Association; died in Columbia Hospital October 12, aged 81, of monocytic leukemia.

Lewey, Frederic Henry ✦ Philadelphia; born in Berlin, Germany, Jan. 28, 1885; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany, 1908; associate professor of neuropathology and research associate in audiology at the University of Pennsylvania School of Medicine and professor of neuroanatomy at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; specialist certified by the American Board of Psychiatry and Neurology; member of the American Neurological Association, American Association of Neuropathologists and the Association for Research in Nervous and Mental Diseases; served during World Wars I and II; affiliated with the Hospital of the University of Pennsylvania; died in Pennsburg October 5, aged 65, of coronary thrombosis.

✦ Indicates Fellow of the American Medical Association.

Dumas, Alexander George, Minneapolis; born in Minneapolis May 11, 1896; Creighton University School of Medicine, Omaha, 1921; clinical associate professor of psychiatry at the University of Minnesota Medical School; member of the American Psychiatric Association; formerly associated with the Veterans Administration Clinic; recently resigned as chairman of the governor's mental health advisory committee of which he had been one of the founders; served as medical director, Minnesota Mental Hygiene Society; formerly consultant to municipal courts of Hennepin County; at one time chief of staff of Glenwood Hills and Homewood hospitals; died in University Hospital October 2, aged 54, of hypertension and cerebral vascular accident.

Bottorff, Melvin Kinch ✦ Lake Village, Ark.; University of Arkansas School of Medicine, Little Rock, 1932; served during World War II; alderman; died in Helena (Ark.) Hospital September 26, aged 44, of uremia, chronic nephritis and malignant hypertension.

Bowser, Willard Parker, Berea, Ohio; Western Reserve University School of Medicine, Cleveland, 1918; served on the staffs of St. John's and Deaconess hospitals in Cleveland and Berea Community Hospital; died September 23, aged 56, of cerebral hemorrhage.

Carrell, John B., Hatboro, Pa.; Jefferson Medical College of Philadelphia, 1876; member of the American Medical Association and in 1915 a member of the House of Delegates; at one time served as school director; member of the Montgomery County Historical Society; for many years editor of the *Bucks County Medical Bulletin;* in 1946 awarded the Good Citizenship Medal of the Philadelphia Chapter of the Sons of the American Revolution; died in the Abington (Pa.) Memorial Hospital September 20, aged 99, of injuries received in a fall.

Carter, Albert Howard, Oak Park, Ill.; Jenner Medical College, Chicago, 1906; member of the American Medical Association; served during World War I; died October 8, aged 66, of cardiac decompensation and an accidental fall.

Chapman, George Little, Toledo, Ohio; Miami Medical College, Cincinnati, 1899; served overseas during World War I; formerly on the staff of Flower Hospital; died in Toledo Hospital October 1, aged 78, of coronary occlusion.

Coffey, Charles James ✦ Milwaukee; University of the City of New York Medical Department, 1894; clinical professor of otolaryngology emeritus at Marquette University School of Medicine; an Associate Fellow of the American Medical Association; for many years assistant city health commissioner; served as a member of the school board, of which he had been past president; past president of the Marquette University Alumni Association; died September 30, aged 80, of coronary thrombosis and arteriosclerosis.

Cox, Thomas Edward, Washington, D. C.; University of West Tennessee College of Medicine and Surgery, Memphis, 1916; served during World War I; died in Freedmen's Hospital October 7, aged 58, of intraventricular hemorrhage and hypertension.

Craft, Harold Albert, Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1937; member of the American Medical Association; at one time on the faculty of his alma mater; certified by the National Board of Medical Examiners; affiliated with George Washington University, Columbia, Doctors, Emergency, Sibley and Homeopathic hospitals; died September 27, aged 48, of coronary thrombosis.

Daniels, Melvin Robert Micheal, Yonkers, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1944; certified by the National Board of Medical Examiners; served during World War II; interned at the Metropolitan Hospital in New York and served a residency in pathology at the Veterans Administration Hospital in New York; died September 23, aged 33, when a small seaplane he was piloting crashed.

Darnall, Moses Hubbard, Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1907; served during World War I; died in Veterans Administration Hospital, Perry Point, Md., September 27, aged 68, of coronary sclerosis.

Davis, Irwin Grant ✦ Rushford, Minn.; Rush Medical College, Chicago, 1914; for many years health officer of Peterson and Rushford; served during World War I; on the staff of Cottrel Maternity Hospital; died September 29, aged 62, of ruptured abdominal aortic aneurysm.

Day, Clark W. ⊕ Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1901; served as police surgeon; formerly member of the board of health; during World War II cited by the President for his work as medical examiner for the Selective Service; member of the staffs of St. Vincent's Hospital and Methodist Hospital, where he died September 23, aged 74, of hypertension and arteriosclerotic heart disease.

De Korven, Victoria K., St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1909; St. Louis College of Physicians and Surgeons, 1911; died in St. Vincent's Sanitarium September 27, aged 80, of primary atypical pneumonia, following a fractured hip received in a fall.

Dixon, Charles Leonard, Renton, Wash.; Jefferson Medical College of Philadelphia, 1895; member of the American Medical Association; health officer of Renton; served as county health officer; director of the Peoples National Bank; died September 23, aged 79, of injuries received in an automobile accident.

Dorne, Maurice ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1916; specialist certified by the American Board of Dermatology and Syphilology; member of the American Academy of Dermatology and Syphilology; associate in dermatology at Northwestern University Medical School; served during World War I; affiliated with Mount Sinai Hospital and Alexian Brothers Hospital, where he died September 24, aged 57, of cerebral hemorrhage.

Eisenberg, David, New York; Long Island College Hospital, Brooklyn, 1908; affiliated with Sydenham and Harlem hospitals; died in Mount Sinai Hospital September 18, aged 64, of coronary occlusion.

Erpelding, John Kenneth, Saginaw, Mich.; Jefferson Medical College of Philadelphia, 1921; served as chief of the Civilian Dispensary, Brookley Air Force Base, Mobile, Ala.; recently appointed to the staff of Saginaw County Hospital; died in St. Mary's Hospital September 18, aged 57, of peritonitis and bronchogenic carcinoma.

Ford, James Arthur, Orlando, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1916; during World War II served as medical examiner for the Selective Service System and was the recipient of several certificates of merit, including a Congressional award; died in Johns Hopkins Hospital, Baltimore, September 23, aged 58.

Foster, Ruth ⊕ New York; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1931; member of the American Psychiatric Association; died September 29, aged 56, of carcinoma.

French, Oscar Witters ⊕ Coalville, Utah; Rush Medical College, Chicago, 1893; formerly vice president of the Utah State Medical Association, of which he had been honorary president since September 1948; served as mayor; died September 16, aged 82, of thrombosis of the abdominal aorta.

Fretz, John Lewis ⊕ Seattle; Rush Medical College, Chicago, 1934; an associate of the International College of Surgeons; member and past president of the Seattle Academy of Surgery; member of the Washington State Obstetrical Association; member of the U. S. Committee for the World Medical Association; served on committee for health, Seattle Municipal League; affiliated with Seattle General Hospital and Virginia Mason Hospital; killed when his private plane crashed at Renton Airport September 22, aged 51.

Galligan, Edward Joseph, Taunton, Mass.; College of Physicians and Surgeons, Baltimore, 1896; member of the American Medical Association; formerly city physician; affiliated with Morton Hospital; died September 25, aged 81, of arteriosclerotic heart disease.

Garland, Harrie Sanborn, Pasadena, Calif.; University of Nebraska College of Medicine, Omaha, 1905; died September 21, aged 67, of coronary thrombosis.

Girdwood, John ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1894; served overseas during World War I; for many years medical examiner for the City Service Commission; died September 25, aged 79, of heart disease.

Grayson, William Friar, Granite City, Ill.; St. Louis College of Physicians and Surgeons, 1898; member of the American Medical Association; formerly state health officer; served during World War I; affiliated with St. Elizabeth Hospital; died September 20, aged 76, of uremia.

Hartzell, Harry Wallace, National City, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; died in Paradise Valley Sanitarium and Hospital September 25, aged 70, of coronary thrombosis.

Hemmings, Lincoln Smith, Bernalillo, N. Mex.; University of Wooster Medical Department, Cleveland, 1914; member of the American Medical Association; died in Albuquerque, N. Mex., September 30, aged 60, of coronary thrombosis.

Hershner, Newton W., Mechanicsburg, Pa.; University of Maryland School of Medicine, Baltimore, 1906; member of the American Medical Association; past president of the Cumberland County Medical Society; for many years medical director of Cumberland County; served on the staffs of the Harrisburg (Pa.) Hospital and the Carlisle (Pa.) Hospital; vice president of the First Bank and Trust Company, where he was a member of the board of directors for many years; died October 8, aged 72, of coronary occlusion.

Hirsch, Jerome Byron ⊕ Greenville, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1907; served overseas during World War I; affiliated with King's Daughters Hospital, where he died October 5, aged 65, of cerebral hemorrhage.

Horn, John Wesley Jr., ⊕ Hummelstown, Pa.; Temple University School of Medicine, Philadelphia, 1917; served as deputy coroner and member of the school board; director of the Farmers' Bank of Hummelstown; died September 29, aged 63, of coronary occlusion.

Hull, Chester E., Fort Wayne, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; died October 2, aged 67, of intestinal obstruction and cancer.

Hunt, Harry Elwyn, State Soldiers Home, Ohio; Cleveland Homeopathic Medical College, 1899; veteran of the Spanish-American War; died in Ohio Soldiers and Sailors Home Hospital October 1, aged 78, of cerebral hemorrhage.

Ives, Nathaniel Holmes ⊕ Mount Vernon, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1895; in 1945 was made an honorary life member of the board of managers of Mount Vernon Hospital in recognition of fifty years' service to the hospital; a trustee of his alma mater; for many years director of the Mount Vernon Trust Company; died in the Lawrence Hospital, Bronxville, October 8, aged 77.

Jacobius, Lawrence, New York; Albany Medical College, 1914; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; affiliated with the Hospital for Joint Diseases, Harlem Hospital and Jewish Memorial Hospital; died September 26, aged 59, of rupture of the abdominal aorta.

Jones, Richard Wayland, Yreka, Calif.; Jefferson Medical College of Philadelphia, 1935; member of the American Medical Association; on the staff of the Siskiyou County General Hospital; died September 24, aged 41, of coronary occlusion.

Karr, Maskell Curwen, Akron, Ohio; Eclectic Medical Institute, Cincinnati, 1909; died September 16, aged 67, of coronary occlusion.

Kimbrough, William Edward, Chatom, Ala.; University of Alabama School of Medicine, University, 1915; member of the American Medical Association; served during World War I; died October 8, aged 60, of coronary occlusion.

King, David Francis ⊕ Laurelton, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1874; an Associate Fellow of the American Medical Association; died September 22, aged 97, of pneumonia.

Kingston, Thomas Smith, Grand Rapids, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1886; formerly practiced in Croswell, where he served as county health officer and member of the local board of education; died in East Grand Rapids September 29, aged 89, of diverticulitis.

Kinney, Richard Anthony ⊕ Jamestown, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1930; served during World War II; died in St. Francis Hospital, Pittsburgh, September 21, aged 44.

Land, Joel Cameron ⊕ Walnut Ridge, Ark.; Memphis (Tenn.) Hospital Medical College, 1900; also a pharmacist; past president of the Lawrence County Medical Society; formerly vice president of the Arkansas Medical Society; served during World War I; health officer; physician and surgeon for the Missouri Pacific and Frisco railroads; died in Baptist Memorial Hospital, Memphis, Tenn., October 3, aged 76, of cerebral embolus.

Latham, Edgar M., Toledo, Ohio; Toledo Medical College, 1900; died September 28, aged 82, of cerebral thrombosis.

Leathers, Douglas Arnold, Indianapolis; Jefferson Medical College of Philadelphia, 1886; died October 1, aged 91, of arteriosclerotic heart disease.

Linn, Robert Fred, Lakewood, Ohio; Loyola University School of Medicine, Chicago, 1938; member of the American Medical Association; fellow of the American College of Surgeons; clinical instructor in obstetrics and gynecology at Western Reserve University School of Medicine in Cleveland, where he was on the staff of Lutheran Hospital and on the consulting staff of City Hospital; served during World War II; died September 26, aged 40, of coronary disease.

McGarry, John Louis, Coeur d'Alene, Idaho; Northwestern University Medical School, Chicago, 1937; member of the American Medical Association; formerly on the staff of St. Francis Hospital, Evanston, Ill.; died September 23, aged 40, of coronary occlusion.

Mercer, Herman A., ✦ Jeffersonville, Ind.; born in Pretty Prairie, Kan., May 22, 1896; University of Oklahoma School of Medicine, Oklahoma City, 1922; formerly assistant in ophthalmology at the University of Illinois College of Medicine in Chicago, where he was a resident in ophthalmology at Research and Educational Hospitals; on the staff of SS Mary and Elizabeth Hospital, Louisville, Ky., and Clark County Memorial Hospital, Jeffersonville; died in Hanover, Ind., October 3, aged 54, of heart disease.

Messner, Paul Oram, Miami Springs, Fla.; College of Medical Evangelists, Loma Linda and Los Angeles, 1934; certified by the National Board of Medical Examiners; served during World War II; died in Jackson Memorial Hospital, Miami, October 2, aged 48, of cerebrovascular hemorrhage and hypertensive vascular disease.

Morse, John Hinckley, Augusta, Maine; Harvard Medical School, Boston, 1901; on the staff of Augusta General Hospital; died September 30, aged 75, of coronary occlusion.

Mosler, Ernst, New York; Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1906; member of the American Medical Association; associated with Flower and Fifth Avenue Hospitals and Beth Abraham Home for Incurables; died September 21, aged 68, of carcinoma of the stomach.

Mott, Edwin Leland, Fresno, Calif.; Jefferson Medical College of Philadelphia, 1918; served during World War I; affiliated with St. Agnes and Fresno Community hospitals; burned to death in a mountain cabin fire near Fresno September 24, aged 57.

Mullikin, Hugh Mathes, Terre Haute, Ind.; Miami Medical College, Cincinnati, 1903; died October 2, aged 73, of coronary disease.

Nihizer, Adonis Hugh ✦ Vaughnsville, Ohio; Ohio State University College of Medicine, Columbus, 1929; affiliated with Lima Memorial and St. Rita's hospitals; died September 20, aged 52, of coronary thrombosis.

O'Hara, Fred Summa, Springfield, Ill.; Marion-Sims College of Medicine, St. Louis, 1899; specialist certified by the American Board of Radiology; member of the Radiological Society of North America, of which he had been first president, the American Medical Association and the American College of Radiologists; served during World War I; affiliated with Memorial and St. John's hospitals; died October 1, aged 74, of cerebral hemorrhage.

Parmeter, Rolland Louis, Albion, Mich.; Rush Medical College, Chicago, 1895; fellow of the American College of Surgeons; formerly practiced in Detroit, where he was affiliated with Wayne University College of Medicine and was for many years on the staffs of Receiving and Harper hospitals; served during World War I; formerly editor of the *Bulletin of the Wayne County Medical Society,* now known as the *Detroit Medical News;* died in the Sheldon Memorial Hospital October 4, aged 78, of heart disease.

Peters, David Boteler ✦ Surgeon, Lieutenant Commander, U. S. Navy, retired, Asheville, N. C.; George Washington University School of Medicine, Washington, D. C., 1917; veteran of World War I; entered the U. S. Navy in December 1930; retired June 1, 1943; died in the Veterans Administration Hospital in Oteen September 26, aged 69, of myocardial infarction and arteriosclerotic heart disease.

Poling, Owen, Mason, W. Va.; Loyola University School of Medicine, Chicago, 1916; member of the American Medical Association; died in Charleston September 27, aged 66, of carcinoma of the lung and liver.

Raiter, Roy Ferdinand, Cloquet, Minn.; born in Stillwater, Minn., Nov. 26, 1897; Northwestern University Medical School, Chicago, 1923; member of the American Medical Association; fellow of the American College of Surgeons and the International College of Surgeons; formerly associated with the Indian Service; medical superintendent of the hospital bearing his name; served on the staffs of St. Luke's and St. Mary's hospitals in Duluth and Fond du Lac Hospital; died in University Hospital, Minneapolis September 23, aged 52, of tuberculous peritonitis.

Reiher, Charles Hoffman, Columbus, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1899; died in Mount Carmel Hospital September 29, aged 84, of arteriosclerotic gangrene of the left leg.

Rossell, Edward Wood, Camden, N. J.; Medico-Chirurgical College of Philadelphia, 1905; member of the American Medical Association; died September 29, aged 73, of cerebral thrombosis.

Smith, Edward Kearney, Lancaster, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1918; member of the American Medical Association and the American Academy of Pediatrics; for many years school physician; affiliated with Rossmere Sanatorium, Lancaster General and St. Joseph's hospitals; died September 12, aged 55, of cerebral thrombosis.

Stutzman, Raymond Howard, Tower City, Pa.; Maryland Medical College, Baltimore, 1912; member of the American Medical Association; affiliated with Lemos B. Warne Hospital in Pottsville, where he died September 23, aged 65, of coronary thrombosis.

Sullivan, Charles Peter ✦ Dayton, Ohio; Northwestern University Medical School, Chicago, 1912; served during World War I; died in Woodlawn Hospital, Chicago, September 24, aged 63, of cardiac tamponade.

Terry, Wallace Irving, San Francisco; Medical Department of the University of California, San Francisco, 1892; clinical professor of surgery emeritus at his alma mater; member of the House of Delegates of the American Medical Association in 1905; member of the American Surgical Association and Pacific Coast Surgical Association, of which he had been past president; fellow of the American College of Surgeons; died September 22, aged 81, of carcinoma of the sigmoid.

Uhlmann, Robert, Kansas City, Mo.; Ludwig-Maximilians-Universität Medizinische Fakultät, Munchen, Bavaria, Germany, 1910; member of the American Medical Association; affiliated with Menorah Hospital; died September 13, aged 63, of cancer.

Voigt, Arno Constantine ✦ Hawley, Pa.; Jefferson Medical College of Philadelphia, 1901; served as county coroner and county medical director; president of the First National Bank; affiliated with Wayne County Memorial Hospital, Honesdale, where he died September 20, aged 72, of arteriosclerosis and myocarditis.

Von Roeder, Ludwig Robert, New York; Cornell University Medical College, New York, 1900; formerly adjunct professor of pediatrics at the New York Polyclinic Medical School and Hospital; affiliated with New York Polyclinic, St. Francis and Park East hospitals; died in Lenox Hill Hospital, September 22, aged 74, of coronary thrombosis with myocardial infarction.

Walker, Wallis Dunlap ✦ Rye Beach, N. H.; Harvard Medical School, Boston, 1901; served during World War I; died in the Exeter (N. H.) Hospital September 24, aged 74, of leukemia.

Wallace, William Smiley ✦ Orange, Calif.; Jefferson Medical College of Philadelphia, 1893; an Associate Fellow of the American Medical Association; past president of the Orange County Medical Society; on the staff of the Orange County General Hospital; died in Las Vegas, Nev., September 14, aged 81, of coronary thrombosis.

Werner, Charles Henry ✦ St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1906; an Associate Fellow of the American Medical Association; served during World War I; affiliated with Missouri Methodist Hospital and St. Joseph Hospital; for many years physician for the Welfare Board; died in the Veterans Administration Center, Wadsworth, September 17, aged 71, of thrombotic infarction with gangrene of the left leg.

Wolfort, Benjamin Edgar, Brooklyn; Johns Hopkins University School of Medicine, Baltimore, 1906; member of the American Academy of Orthopaedic Surgeons and the American Medical Association; affiliated with Jewish Hospital; died in September, aged 70, of coronary occlusion.

Woodbury, Frank Taylor ✦ Wakefield, Mass.; Harvard Medical School, Boston, 1896; past president of the Middlesex East District Medical Society; on the honorary staff of Melrose Hospital; for many years trustee of the public library; died September 16, aged 78, of coronary thrombosis.

Young, Robert, Hoopeston, Ill.; Columbia University College of Physicians and Surgeons, New York, 1949; certified by the National Board of Medical Examiners; interned at Indiana University Medical Center in Indianapolis; intern in pediatrics at the University of Chicago Clinics in Chicago; served during World War II; died in Bob Roberts Hospital in Chicago, September 25, aged 25, of coronary occlusion.

FOREIGN LETTERS

LONDON

(From a Regular Correspondent)

Oct. 10, 1950.

Annual Representative Meeting, 1950

The meeting was held in the Great Hall of British Medical Association House, London, on Thursday, Sept. 28. The chair was taken by Dr. J. A. Brown (Birmingham), chairman of the representative body, who was supported by the president of the association (Sir Henry Cohen), the chairman of the Council (Dr. E. A. Gregg) and the treasurer (Mr. A. M. A. Moore). The meeting began at 9:30 a. m. and completed its work at 6.15 p. m.

The General Practitioner-Specialist.—Dr. Leak, on behalf of Mid-Cheshire, further moved: "That this meeting considers that greater recognition should be given to the established practitioner with specialist experience, who seems strangely neglected in the Council's recommendations on general practitioners and hospital work." He said that those concerned felt very keenly having to give up their specialist jobs after many years. They might not have the F.R.C.S. but they were persons with excellent records and experience and trusted by their patients, having lived for a long period with their successes and their failures. Mr. Staveley Gough said that he felt again that the wording of this motion showed lack of understanding of the report. At least three sections of the report were concerned with the introduction of the general practitioner in a specialist capacity into the hospital system. The boards of the hospitals had a public duty to see that the members of the staffs held certain qualifications or had had certain experience as assessed by committees of their brethren or by tests in open competition following public advertisement. Thus any general practitioner having the necessary experience and qualifications could answer a public advertisement for a post, and if he were a good man he would get the job. It had been realized that in the past there was an implication that he might not get the job because he was a general practitioner, but the report specifically stated that the fact of being a general practitioner would not bar him. Mr. Lawrence Abel (Marylebone) moved an amendment to end the motion at the words "specialist experience," omitting the denigratory reference to the Council's recommendations. The report covered these established practitioners and declared that the appointment of the general practitioner specialist should be retained and encouraged. This was bound up with the grading question. He said the grading would be examined in 1951. Many men had suffered three years' diminution of income because they had been incorrectly graded. The motion was amended and carried.

Designations of General Practitioners in Hospitals.—Dr. A. G. Heron (Bristol) moved: "That the Council be requested to provide a clear designation for general practitioners engaged (*a*) in paid sessional work in hospitals and (*b*) in honorary appointments for educational purposes, and shall endeavour to procure the acceptance of these designations by the regions, and that safeguards be set up so that a general practitioner attending a hospital as a clinical assistant for educational purposes shall not be used to fill an otherwise remunerable employment." He said that the Council had laid down as a principle that the term "clinical assistant" should be used only in its strictest sense. In the planning of action later in the report a dangerous ambiguity appeared to creep in. If these appointments involved useful work in hospital, such work should be paid for, even though it had educational value. Why should the underpaid general practitioner be the only member of the profession still required to work on an honorary basis? What hope had the general practitioner anesthetist, for instance, of achieving consultant status, with the queue of senior registrars and registrars awaiting appointments?

Mr. Staveley Gough said that the committee had approached this matter with some care. The term "clinical assistant" had in the past generally been associated with an honorary job. The first part of the committee's work was concerned with the endeavour to get hospital accommodation for the general practitioner. It was stated most specifically that a post created for educational purposes must be purely educational and carry no degree of clinical responsibility toward the patient. If the clinical assistantship carried with it clinical responsibility, this must be paid for. With regard to part time appointments, the committee was satisfied that such appointments should be paid ones. Dr. Watney Roe supported the motion. The solution was the early institution in hospitals and clinics of paid posts open to general practitioners. Dr. Heron said that Mr. Staveley Gough seemed to come dangerously near accepting the principle of sweated labor in order to get general practitioners into hospitals. The committee, he said, had not faced the question: When is a clinical assistant not a clinical assistant, and when he is not, what is he? The Bristol motion was carried.

The General Practitioner and Major Surgery.—Dr. A. C. E. Breach (Bromley) moved that there should be omitted from the council's interim report the statement ". . . it is stressed that major surgery should not be included in it," that is, the scope of general practice, and the further statement under the heading "Way in Which Integration May Be Achieved."

The motion read that he (the general practitioner) should, of course, not undertake major surgery. He must restrict himself to such work as is within his sphere. Major surgery should not be performed in general practice hospitals, although, of course, even in the smallest hospital this may be necessary in an emergency. He said that they were impressed by the over-all excellence of this report. Bromley was requesting not a positive assertion of the right of the general practitioner to practice major surgery but the deletion of a prohibition. They felt that, if that prohibition were allowed to go through unchallenged, it would come to be regarded as part of the policy of the association, that is, that a general practitioner, unless recognized by some other standards, such as assessment by selection boards, was not *ipso facto* entitled to practice the art in which he had qualified. If they once accepted the idea, there was no limit to the number of restrictions that could be imposed under the Medical Acts. It was intolerable that any committee, whether governmental or of their own profession, should say that a man who had achieved qualification as a surgeon must not practice surgery unless he had satisfied some extraneous board.

Mr. Staveley Gough begged the meeting not to be persuaded by an emotional approach to their rights as members of the profession. They were public servants. They had a responsibility to their patients and to their profession. The purpose of this report was to get general practice beds back and new wards open to the general practitioner. He went on to say that there were two sections of general practitioners: those who did general practice only, and those who also did, and had a right to do, specialty work outside general practice. The bodies responsible for hospitals had a right, if asked for general practice beds, to insure their being used for general practitioner purposes. The general

practitioner-specialists had other possibilities of entering a hospital, but he must be prepared to show that he had the necessary special experience.

Dr. C. F. Mayne (Plymouth) supported all that Mr. Gough had said. He had spent 10 years in general practice before becoming a specialist, during which time he was on the staff of a hospital as a general practitioner. There must be safeguards for the patient, and he thought those safeguards were provided by the present report. It was wrong for general practitioner-surgeons to attack malignant disease in a small rural hospital when they were not in full collaboration with the radiotherapist of the area. The amendment in his view would have the effect of deleting certain safeguards that were in the patient's interests.

Lord Horder (Marylebone) thought that the words which Bromley wanted deleted were unfortunate. Care, he said, must be taken not to lay down limits, whether it be to the practice of medicine, surgery or midwifery. He did not mean by this that any general practitioner, however good he might be, should deal with a difficult and complicated surgical procedure for advanced cancer. That would be a travesty of common sense. But he thought it unfortunate that the word "must" came in ("He must keep to such work as is within his sphere"). A short time ago they were threatened with a veto on attending a woman for the delivery of her baby unless they had some special qualification or sanction to do so. They must notice how near they were standing to the sabotage of their own privileges. The Bromley amendment after some further discussion by several other speakers was carried by a large majority, and the interim report as amended was approved.

Women in Medicine

In a recent article in the *British Medical Journal*, there appeared a review of the proportionate numbers of women in London medical schools. The article points out that, whether or not one agrees with Sir Robert Hutchison's views that women in men's medical schools are a disturbing element, it is a fact that all the London medical schools are now coeducational. In 1944 the Goodenough Committee drew attention to the difficulties besetting women undergraduates who desired to study medicine in London. Coeducation was a familiar feature in medical schools in the rest of Britain. In London at the time of the report nine out of 15 medical schools of London University admitted men students only. There was one, the Royal Free Hospital Medical School, limited to women only. The committee considered that, in the interests of the public and of the medical profession, coeducation should become the practice in every medical school. They recommended a reasonable proportion of women students to men students in every school. The London University about that time said that its policy was to open all medical schools to men and women on terms of equal opportunity. The University Grants Committee bluntly said, "No coeducation, no grant." By 1947, all medical schools of London University were coeducational.

The proportion of women to men in Britain in 1938-1939 was 1 to 5.7. The provincial, Scottish and Welsh universities account for 1,275 out of 1,930 women medical students. This showed a "reasonable" proportion to be one woman to four men. But in the London University no fewer than 357 of the 551 women medical students were at the London School of Medicine for Women, that is, the Royal Free Hospital Medical School. The remaining 194 were in King's College, King's College Hospital, Queen Mary College, University College and University College Hospital. Figures for London as a whole showed that there was one female to every eight male medical students. In the Scottish extramural schools there was one woman to every 19 men, but these schools are exceptional—in 1938-1939, 40 per cent of the Scottish extramural students were from foreign countries.

By 1948-1949 the total number of women medical students had risen to 2,931. There was a fall in the men students to 10,281 (from 11,037). By that year the proportion of women students to men had risen to 1 : 3.5, representing an increase of 50 per cent over the figure for 1938-1939 (1 : 5.7). In Scotland and Wales and the provinces there was nearly one woman student to every three men, while in London the proportion of women (18.9 per cent) was close to the 1 : 4 proposed by the Goodenough Committee. Against this it must be recorded that the West London Hospital for Women in 1948-1949 had 68 women, but it has now ceased to recruit undergraduate students since it is to be converted to a school for postgraduate training.

Schools that were coeducational before the war continued to train about the same number of women students. King's College and King's College Hospital averaged 1 : 5.7 in 1948-1949; University College and University College Hospital show a slightly higher proportion of women (1 : 4.7); at Queen Mary College the figure is a little less (1 : 9). Of the nine schools that refused to take women before the war, none have as yet reached the Goodenough "reasonable" proportion of women to men. St. Bartholomew's, Charing Cross and St. George's hospitals come nearest, with one woman to every seven men. Guy's, London and Westminster have a proportion of less than 1 : 19. Intermediate between these come the Middlesex, St. Mary's and St. Thomas's hospitals. When the Royal Free Hospital is included, the total proportion of female to male medical students at London University in 1948-1949 falls just short of the 1 : 4 recommended in the Goodenough report. If every school had its recommended reasonable proportion of women there would be 479 more women medical students in London than there are at present. However, extra facilities would have to be provided, and there would be fewer places for men, the article states, and this might lead to the reflection on the doubtful wisdom of trying to spread the load too widely. Feminists, they point out, should take note of the fact that the Royal Free Hospital, also coeducational, last year had the very unreasonable proportion of only one man to every 93 women medical students.

Victory Medal for Diabetes

Dr. Elliott P. Joslin, who celebrated his eighty-first birthday last June, is known throughout the world as a distinguished veteran in the fight against diabetes. About two years ago, as part of his effort to educate diabetic patients in healthy living and show them what proper care can do, he originated the Victory Medal, to be presented to every person who is still free of all vascular disease after a quarter-century or more with proved diabetes. In the 24 months up to June 1, 1950, 20 patients had passed this test. Last year Dr. Joslin gave a medal to Dr. R. D. Lawrence, who for 20 years had led an active professional life as a consultant in diabetes and is said to have been one of the first persons in Britain to receive insulin.

The above report appeared in a recent edition of the *British Medical Journal*. Dr. Howard F. Root has now invited its editor to award a bronze Victory Medal in Britain. The journal records its warm appreciation of the generous gesture of goodwill from our American colleagues. The medal is now in the office of the journal. A committee is to be formed to decide how best to award it. The medal, illustrated in Dr. Root's letter, was designed by Amelia Peabody. It is 2 inches in width, and on the reverse side appear the words "For life and health through perseverance and scientific medicine."

ISRAEL

(From a Regular Correspondent)

JERUSALEM, Nov. 9, 1950.

Dracunculosis Among Immigrants from Yemen

During the past year there has been an incidence of tropical diseases which had not been previously observed in Israel. I. Katzenellenbogen has published his first observation of cases of dracunculosis in *Harefuah* (Oct. 15, 1950). The patients were between 3 and 67 years of age. Of the 49 patients, who had arrived in Israel eight months previously, four came from Sharab and 45 from Suda, a large village in the marshes of Yemen. All the patients except those from Sharab had had numerous filariae in the past as well as during the observation period in Israel, which occurred in the summer months. Filariae were not seen during the past winter.

Swelling, inflammation of the limbs, boils and blisters of the skin, rise of temperature and general malaise preceded the appearance of the worms. While the feet and legs were predominantly affected, filariae were also seen extruding from the buttocks, mammae, palms and even the penis. Seventeen worms were observed in a 5 year old boy during his seven week stay in the hospital. Cellulitis-like swellings and blisters with rise of temperature up to 40 C. (104 F.) would occasionally announce the arrival of a new Dracunculus. Occasionally filariae protruded from under tiny scabs with practically no inflammation and no rise of temperature. The period of time from the perforation of the skin and the appearance of the embryos containing pus to the emergence of the worms varied, even in the same patient, from a few days to two or three weeks.

In three patients calcification of dead filariae from previous attacks was noted. Large pigmented scars on the legs and buttocks were found in patients with earlier attacks of dracunculosis. In practically all adult patients the worms recurred regularly every year. One patient was reported to have had more than 300 filariae in the past. The results of blood cell counts were not uniform. Leukocytosis and eosinophilia were noted in some patients. A child with numerous filariae had a normal eosinophil count but a leukocyte count of 19,000 and hemoglobin of 68 per cent. Treatment was completely symptomatic. Penicillin and sulfonamides were given in cases of cellulitis and similar septic inflammations.

First Research Council Bulletin

The Research Council of Israel, attached to the Prime Minister's Office, has issued its first bulletin. The Council's task, as defined by Mr. Ben Gurion at its first meeting, is threefold: (1) to foster pure and applied research and to coordinate scientific and higher educational activities in the interest of the development of the country and the absorption of immigrants, (2) to improve scientific equipment in general and to establish laboratories for physics and biology and (3) to assist young research workers and to invite experts from abroad. The bulletin surveys the tasks and present activities of the five principal committees and their subcommittees, dealing with fundamental research questions, industrial research, building problems, food and agriculture. The practical importance of this kind of research is illustrated, for instance, by the fact that the damage caused by corrosion of irrigation pipes amounts to at least one million pounds yearly.

Donation to Medical School

Through the efforts of Prof. J. M. Rogoff, of the University of Pittsburgh, United States, $25,000 has been donated for the equipment of a physiology laboratory for the University-Hadassah Hospital Medical School. Professor Rogoff was also instrumental in obtaining through the Phi Lambda Kappa Fraternity of Jewish physicians in the United States four annual scholarships, each valued at $1,500, for students of the medical school. Professor Rogoff gave the first series of lectures to the first class of medical students after the formal opening of the medical school in May last year.

BRAZIL

(From a Regular Correspondent)

RIO DE JANEIRO, Sept. 28, 1950.

Identification of Leptospirae in Rats

Dr. V. O. Guida, of the São Paulo Biological Institute, studied serologically 29 strains of leptospirae isolated from Rattus norvegicus captured in the city of São Paulo and ascertained, through agglutination and lysis, the titers of the serums from infected and noninfected rats and their relation to infection in those rodents. The 29 strains of leptospirae could all be identified as Leptospira icterohemorrhagiae, as they reacted positively with anti-icterohemorrhagiae serum and negatively with anticanicola serum. In 16 strains the levels of antibodies were as high as 1:15,000. The search for antibodies against L. icterohemorrhagiae in 24 rats from the same city was positive (1:50) in 11 out of 17 adult animals and negative in seven young ones. The search for Leptospira in the kidneys of 11 positive animals by the combined methods of dark field, culture and Guinea pig inoculation was successful in 9 cases. The other two rats, despite a high serologic titer (1:300 and 1:15,000) were not Leptospira carriers and were probably in a recent self-sterilizing stage.

Intrauterine Transmission of Schizotrypanum Cruzi Disproved

The common mechanism of transmission of the causative agent of American trypanosomiasis (Chagas' disease) from vertebrate to vertebrate is by means of intermediate hosts, i. e., the cone-nosed bugs of the family Triatomidae. Direct passage from a female animal to her young has also been observed. The congenital transmission in man, although considered by Chagas to be the principal cause of the chronic nervous form of trypanosomiasis, has not yet been proved. Dr. J. Pedreira de Freitas and Dr. Francisco Pinto Lima, of the Department of Parasitology, University of São Paulo, have recently reported a case of a woman, ill with Chagas' disease, who died at the end of pregnancy and whose child, also dead, was not infected. The clinical and pathological pictures of the mother revealed an intense chronic myocarditis, the etiology of which was made clear by positive complement fixation reaction and xenodiagnosis. Pathological examination of the fetus did not reveal any change that could prove the presence of the infection, nor did the placenta show any nest of the Leishmania stage of the trypanosoma, as is so frequently observed in animals infected with the parasite.

Concurrent BCG Vaccination and Familial Tuberculosis

Dr. Arlindo de Assis published a paper adding factual evidence that concurrent BCG vaccination is, as he says, strikingly more efficient than the common immunization of newborn infants. Both procedures are used as a means of fighting child tuberculosis in Rio de Janeiro. Dr. Assis reported the instance of a poor couple who had had 12 children. The first seven had not been immunized with BCG, while the last five received the protection of the vaccination immediately after birth. Of the seven nonvaccinated children, four died in early infancy, of diseases described by the parents as meningitis and capillary bronchitis. The three living nonvaccinated children are healthy and react to tuberculin. In the last few years, the father began to present symptoms of a disease described as chronic bron-

chitis but which was later found to be pulmonary tuberculosis. From then on the couple agreed to have their newborn children vaccinated with BCG, four of them having been immunized immediately after birth by the Calmette method, the last one by the concurrent method (six BCG doses during the first semester of life). Of the four immunized by the Calmette method, two died of capillary bronchitis and acute bronchopneumonia. The other two children presented radiological and allergic pictures of primary active tuberculosis, in one of them confirmed by guinea pig inoculation of gastric material. Both children continue to react to tuberculin. The last child, born during the undisputably bacilliferous stage of the father's illness, in direct contact with the father to the age of 4½ months, when the father died. This last child, a boy, vaccinated by the concurrent method, was entirely free from the effects of the contagion and is now 54 months old. Since the age of 16 months he has not reacted to tuberculin (anallergy up to 10 mg. of unpurified tuberculin).

Chronaxia, Curare and Neostigmine in Man

Drs. J. Souza Campos and Elvio Fuser, of the N. S. Aparecida Hospital of Rio de Janeiro, reported their study on chronaxia with frogs and human patients under the effect of curare and neostigmine. Patients who received therapeutic doses of curare never presented changes of the normal values of chronaxia. Some showed advanced symptoms of curarization (paralysis of the abdominal limbs, difficulty in swallowing, slight cyanosis), which led to the use of the antagonistic drug (neostigmine). Even then the values of chronaxia were normal. Under experimental conditions with toxic doses, after the appearance of neuromuscular dysfunction, an increase of 10 and 12 times the normal value was always observed, but the chronaxia of the nerves was normal. Human patients treated with neostigmine did not show any chronaximetric changes in muscles and nerves, and in frogs paralyzed by neostigmine the chronaxia of muscles and nerves was also normal. In these animals, neostigmine did not reduce the high values characteristic of curare poisoning. In conclusion, the systematic increase of the chronaxia value in frogs under curare intoxication is observed only after the appearance of neuromuscular dysfunction (Claude Bernard's phenomenon).

COLOMBIA

(From a Regular Correspondent)

Bogotá, Oct. 4, 1950.

Early History of Cinchona

Prof. Jaime Jaramillo Arango, former rector of the National Faculty of Medicine and former Colombian ambassador to England, recently published an article in *Revista de la Facultad de Ciencias Médicas of Quito* (April 1950) entitled "Critical Study of the Basic Facts of the History of Cinchona." This study has also appeared in the *Review of the Linnean Society of London; Revista de la Academia de Ciencias Exactas, Fisicas y Naturales* (Madrid) and *Anales de la Sociedad Peruana de la Historia de la Medicina*. Professor Arango's work has been commented on in the *Review of the New York Botanical Gardens* by F. R. Fosberg, who considers the study to be the "last word on the early history of cinchona." Dr. Jaramillo Arango believes that the American Indians knew about and used the bark of the cinchona tree. There is no definite evidence concerning the first use of cinchona bark by the Europeans. The legend of the cure, whether of the Countess or of the Count of Chinchon, is almost completely refuted. The theory that the Jesuits first introduced quinine to Europe and were responsible for its extensive use there is the most plausible one. They apparently brought the drug to Rome during an epidemic of malaria, which they controlled with quinine. Possibly before this, others may have brought it to Spain. The oldest work on quinine seems to be the "Schedula Romana" of 1649, attributed to Puccerini. Professor Arango discusses the classification of the cinchona by Linnaeus, the discovery of quinine by Mutis in Nueva Granada and the basic change in the genus of cinchona, from the original C. officinalis to C. cardifolia (C. pubescens), in the twelfth edition of the "Systema Naturae" (1767).

Therapeutic Tests with Antireticular Cytotoxic Serum in Schizophrenia and Arteriosclerotic Dementia

Dr. Carlos Artega Camero published in the *Revista de la Facultad de Medicina* of Bogotá (June 1, 1950) the results obtained with antireticular cytotoxic serum in 30 patients in the Women's Mental Hospital of Bogotá. Twenty-four had schizophrenia of long duration and had been previously subjected to various shock treatments without improvement: five had senile dementia with cerebral arteriosclerosis, and one had an exogenic puerperal psychopathy. A permanent remission of mental illness was obtained in only the last-mentioned patient. There was no improvement in 12 schizophrenic patients, while improvement was transient in six and permanent in six. None improved to a degree that would have allowed her to return home and become reintegrated again in normal family life. Of the five patients with senile dementia and cerebral arteriosclerosis, two showed no improvement, two permanent improvement and one died on the fifth day after the termination of the treatment owing to an intercurrent disease. The author concludes that Bogomolest's serum is of some value in schizophrenia. It is of promissory value in senile dementia, cerebral arteriosclerosis and exogenic infectious psychosis, but the limited number of cases observed does not permit definite conclusions. The author's results do not agree with those reported by others.

New Faculty of Medicine

The new Faculty of Medicine of the University of Cauca in Popayan City began functioning on October 2. Under the jurisdiction of the National University it will have the same programs and standards of the university. The school opened with 70 students and the following staff: Dr. Nestor Santacoloma, dean and professor of anatomy; Dr. Alvaro Angulo, assistant professor of anatomy; Dr. Leonardo Santamaria, professor of medical chemistry; Dr. Julio Cesar Perafan Fajardo, professor of medical physics, and Dr. Reinaldo Coronel, professor of medical drawings. Only first year medicine is to be presented this year. The curriculum will be expanded so that the students will be able to complete their studies. The present school is a reestablishment of the old school that was in operation in Popayan City during the nineteenth century. The Faculty of Medicine of the University of Cauca was established on Aug. 5, 1835 and was in existence until 1890.

Lectures

Dr. Eduardo Coke, former minister of public health and professor at the University of Santiago, Chile, visited Bogotá in August. He spoke at the National Academy of Medicine and at the Colombian Medical Federation on the pathogenesis of cancer and on the establishment of social security in Chile.

Dr. Vicente Senti Montagut of the Faculty of Medicine and of the Provincial Hospital of Madrid, Spain, lectured at the Facultad de Medicina of the National University, Sept. 11, on the pathogenesis and treatment of scoliosis.

Drs. Herald R. Cox and Sydney H. Babcock Jr., of the United States, were invited to lecture at the National University and the Javeriana University. They remained in Bogotá from September 19 to 25. Dr. Cox, winner of the Theobald Smith Award of 1941, spoke on experiments on neurotropic virus as oncolytics and on aureomycin therapy in rickettsial diseases. Dr. Babcock spoke on antibiotics in general.

CORRESPONDENCE

TREATMENT OF POSTANESTHESIA NAUSEA AND VOMITING

To the Editor:—Since the introduction of dimenhydrinate (dramamine®) in 1947 by G. D. Searle & Co. many uses have been found for this drug. The most phenomenal results were those in motion sickness published by Gay and Carliner. Nevertheless, its major usefulness will be evaluated differently, depending on the phase of medicine in which one is interested. This is well illustrated by the following reports: (*a*) E. F. Kerman successfully treated 15 patients for nausea following electric shock and also eight patients with migraine, (*b*) E. Brentan employed it in migraine, (*c*) Beeler and co-workers in radiation sickness, (*d*) Campbell after fenestration operations and (*e*) Stoecker after local anesthesia in ophthalmology. All reports show good results. However, one of the most important uses of dimenhydrinate has not been reported as yet: that is, its use for nausea and vomiting following general anesthesia.

In ophthalmology it is imperative that the patient should not vomit after intraocular surgery or diathermy for detachment of the retina. While the need for maintaining the patient in a quiescent state after surgery may not be so acute in other specialties, the well-being of any surgeon's patient is always a prime requisite.

The possibilities of dimenhydrinate in postanesthesia vomiting first occurred to me in December 1949, while interrogating a patient who had recently lost an eye because of vomiting following a cataract extraction. The patient had previously had two operations with intravenously administered thiopental sodium as an anesthetic. He had been so delighted with this form of anesthesia that, when he was ready for the cataract operation, he requested its use for this operation. After its use, he vomited severely for eight consecutive days. No remedies were of appreciable benefit. As morphine had been given for this third operation, in spite of orders to the contrary, it was thought that this may have been the offending agent. Consequently, when a fourth operation was under consideration, the patient, the anesthetist and the surgeon discussed the type of anesthesia to be employed. As the patient was apprehensive, he again decided on thiopental sodium without morphine.

After the fourth operation he was very sick—he was nauseous and vomited. The night of the operation the patient was found lying on his abdomen holding onto the bed. When he said his head was going around so that he felt he must "hold on for dear life," the use of dimenhydrinate was immediately thought of. The anesthetist had not previously employed it for this purpose. However, he administered 100 mg. rectally. In approximately a half-hour the patient had entirely recovered. Since that time we have employed dimenhydrinate as a preoperative prophylactic measure, with considerable satisfaction.

The departments of anesthesiology of both local hospitals have availed themselves of this information. The staff of the St. Joseph Hospital has employed the drug in 16 cases for postanesthesia nausea and vomiting, from ether in three cases, thiopental sodium in 10 and cyclopropane in three. The results in all cases were excellent. The staff at Memorial Hospital has used it with good results in six cases in which cyclopropane anesthesia had been used.

The present lack of knowledge of the total pharmacologic action of dimenhydrinate precludes the possibility of analysis of its therapeutic effect. The cases in which we used it certainly suggests a quieting effect on the labyrinth. It is our impression that in these patients a toxic labyrinthitis develops from the high concentration of the anesthetic agent in the blood stream during anesthesia. The sedative action of dimenhydrinate in motion sickness also embraces this impression.

The dosage employed prophylactically was 100 mg. given orally a half-hour before operation. In cases in which nausea and vomiting followed surgery (no dimenhydrinate having been given before surgery) 100 mg. were suspended in 20 cc. of isotonic sodium chloride solution and given rectally.

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ANTIDOTES FOR BROMATE NEUTRALIZERS

To the Editor:—In view of the recent editorial comment (Neutralizers in Home Permanent Waving Kits, *J. A. M. A.* **144**:397 [Sept. 30] 1950) on neutralizers in home permanent waving kits, publication of a standard antidotal procedure for accidentally ingested bromate neutralizer may be of some value.

1. Administration of an emetic.
   (*a*) Mustard powder, 1 teaspoonful, in 300 cc. of warm (not hot) water, or
   (*b*) Zinc sulfate, 1 teaspoonful, in water, followed by copious ingestion of water, or
   (*c*) Apomorphine, 5 mg., intramuscularly.
   (*d*) Gastric lavage.
2. Sodium thiosulfate, 1 level teaspoonful in water. This may precede but should in addition always follow the emetic.
3. Demulcent drinks, such as milk, flour and water or cereal gruel.
4. Sodium thiosulfate solution, 1 per cent by intravenous drip, in quantities of 100 to 500 cc. If not feasible, 10 to 50 cc. of 10 per cent solution of sodium thiosulfate may be given intravenously.

Gastric washings and urine should be tested for the presence of bromide. Since a fatal outcome is apparently dependent on the nephrotoxic effect of bromate, speedy removal of the material from the stomach by mechanical or chemical means is of the utmost importance. When uremic symptoms develop, treatment is indicated as for mercury poisoning, since tubular degeneration similar to that produced by mercury has been noted in bromate studies on animals.

It should be noted that the antidotal procedure listed above is not applicable for all cold wave neutralizers. In the past year, one manufacturer (The Toni Company), cognizant of the toxic properties of bromate, has discontinued its use and has been supplying in its stead a neutralizer consisting of sodium perborate and sodium hexametaphosphate. Toxicological studies of this new formulation had shown it to be of considerably lower toxicity than bromate, since all experimental animals survived administration of relatively large quantities (exceeding, on the basis of body weight, the "human dose"). When antidotal procedures are required in a case of perborate ingestion, those listed under heading 1 may be used. In addition, the administration of magnesium sulfate by mouth is suggested.

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Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Acts: Revocation of License for Fraud and Deception.

The plaintiff, a chiropractor, filed an action to annul an order of the defendant, the State Board of Chiropractic Examiners, which revoked his license to practice chiropractic. From a decree sustaining the revocation order, the plaintiff appealed to the court of appeals of Tennessee.

The evidence showed that the plaintiff, who was licensed to practice chiropractic but possessed no license to practice medicine, had practiced medicine and surgery on two persons during 1947 and 1948 on specified occasions. The acts which were found to have constituted the practice of medicine were the use of hypodermic injections, the prescribing of medicines and the performance of an operation for the removal of a vaginal tumor. It is not claimed that his activities were authorized by his license as a chiropractor under the statutes defining the art as "the science of palpitating, analyzing and adjusting the articulations of the human spinal column by hand." It is insisted, however, that the chiropractic act is definitive and not prohibitive and that, since the act does not expressly prohibit any of the activities in which the plaintiff engaged, the defendant exceeded its authority and acted illegally in revoking the plaintiff's license. In brief, it is argued that the defendant assumed a legislative prerogative by creating on its own initiative and authority a ground for revocation and that its action in so doing destroyed a property right in violation of the constitutions of both the state of Tennessee and of the United States.

The right to practice a lawful profession, said the court of appeals, is a property right of which one cannot be illegally deprived. A license to practice a profession affecting the welfare of the public and, therefore, subject to the police power of the state, however, is not a contract entitling the holder to continue the practice of his profession unrestricted and unregulated. The state legislature unquestionably has the right, in the exercise of its police power, to set up boards to investigate the practice of the professions and to endow such boards with the right and duty to revoke, for good cause, a license previously granted. The power so delegated, however, can involve only a discretion as to when a proper occasion exists for executing the power. It cannot extend to the making of a new law. To avoid a violation of this principle, we think it must be said that the revocation of a license to practice a lawful profession cannot be predicated on acts or conduct not specified in the statute or embraced within its general terms.

Continuing, the court said that this does not mean, however, that in addition to providing specific grounds for revocation such boards may not validly be granted the power to revoke on general grounds which, by common understanding and universally accepted standards, are regarded as dishonorable, disreputable or incompatible with the honest practice of the licensed profession and the public welfare. For example, charges involving such general grounds as "unprofessional," "dishonorable" or "immoral" conduct and words of like general import in connection with the practice of the profession of medicine are frequently made the predicate for revocation of a license to practice that profession. We think the legislature, after laying down specific grounds for the guidance of the defendant, intended by the chiropractic act also to confer on it the power to revoke the license of a chiropractor whose activities were found to be unprofessional or subversive of the public interest and welfare. It did so, in our opinion, by authorizing the board to revoke the license of a practitioner who "in any way" has been "guilty of deception or fraud in the practice of chiropractic." This language, while confined to activities occurring in connection with the practice of the profession of chiropractic, is general in scope and meaning. Can it be supposed that one who, under his license as a practitioner of chiropractic, purports to engage in the practice of medicine and even of surgery, as shown in this case, and exacts a fee for such "services," has not been guilty of "deception and fraud in the practice of chiropractic?" The legislature with good reason has gone to great pains to define the standards for practitioners of medicine and has said that those who meet the standards of that profession can practice it. This clearly implies that others cannot. The plaintiff, by the undisputed evidence, has violated this policy.

When a licensed practitioner in one field uses his license in another field, and the title of "Doctor," to engage in an illegal practice, it is easy to see how the ignorant and credulous could be induced to part with their money on a false assumption. We think the conclusion that such conduct amounts to a fraud and a deception in the practice of the art for which a license has been issued is inescapable. In our view the language of the act under consideration is no more subject to attack as being too general than if it has used the language "unprofessional," "disreputable" or "immoral." Fraudulent or deceptive conduct in connection with the practice of a profession must be held to be unprofessional, disreputable and immoral. In practical effect, the terms are synonymous. Accordingly the order and decree revoking the plaintiff's license to practice chiropractic was affirmed.—*Janeway v. State Board of Chiropractic Examiners et al., 231 S.W. (2d) 584 (1950).*

Medical Motion Pictures

Behind the Menu. 16 mm., black and white, sound, showing time 10 minutes. Produced in 1950 by the National Film Board of Canada for the Department of Health and Welfare. Procurable on rental or purchase from National Film Board of Canada, 400 West Madison Street, Chicago 6, and 1270 Avenue of the Americas, New York 20.

This motion picture depicts a warning against unsanitary conditions in restaurants and demonstrates precautions that should be taken against dirt and harmful bacteria in the handling of food. Suggestions are made for increasing efficiency through better food storage, dishwashing methods and staff facilities. A few measures taken by public health authorities to maintain standards of restaurant sanitation are also portrayed.

The film points out some of the bad practices in the preparation and handling of food and the treatment of the refuse that spreads communicable diseases, emphasizing the proper as well as the improper methods of handling food, equipment and utensils. In a clearcut way, it points out most of the procedures that are essential in the control of spread of disease. A few of the protective measures taken by many restaurant owners which are illustrated are provision of easily cleaned equipment, arrangements for adequate staff washing facilities and spraying of kitchens with insecticides. Proper dishwashing methods are demonstrated, and a magnified picture of the bacteria lurking on poorly washed dishes proves the need for sterilization. Scenes in a dirty restaurant point up the danger signals by which customers can recognize poor places to eat: flies, chipped crockery and lipstick on the drinking glasses. Visits of inspection and routine tests by public health authorities are described. One sequence portrays a couple going into an unsanitary restaurant. The narrator suggests that the only effective means of raising health standards in restaurants is by the refusal of customers to patronize those where insufficient sanitary precautions are taken. However, this is ineffective from a production standpoint since the couple does not make any attempt to carry out the suggestions of the narrator.

The film is made in such a way that it would appeal to both professional and nonprofessional persons, and even those with no concept of food handling would benefit from seeing the picture. It is a good introductory film to the subject of food handling and should be shown to public health workers, service clubs, high school students, PTA groups and other organizations concerned with improving local restaurant conditions. The photography and narration are good.

POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for the Period January 1, 1951 to July 15, 1951

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Electrocardiography	1288	Nutrition	1294	Surgery	1300
Electroencephalography	1289	Obstetrics and Gynecology	1294	Therapy	1301
Endocrinology	1289	Ophthalmology and Otolaryngology	1295	Urology	1301
Endoscopy	1289	Orthopedic Surgery	1296	Venereal Diseases	1301

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ALLERGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	Six month Personal Course in Allergy	By appointment, full time	$500.00
	One month Personal Course in Allergy	1st of every month, full time, by appointment	200.00
	Personal Course in Allergy and Related Conditions	April 18, 10 weeks, 10 sessions, part time	125.00
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Allergy	April 9-13, 5 days, full time	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich. At: Receiving Hospital	Allergy Clinic and Conference	March 12-June 9, part time	25.00
American College of Allergists, 423 LaSalle Medical Building, Minneapolis, Minn. At: Edgewater Beach Hotel, Chicago, Ill.	Graduate Instructional Course in Allergy	February 9-11, full time	35.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York At: Roosevelt Hospital At: Mt. Sinai Hospital	Medicine PM 81 Clinical Allergy Medicine PM 36 Allergy	January 22-February 2, full time March 5-19, part time	120.00 40.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Allergy	Arranged, Spring, 8 sessions, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York At: University Hospital	5415-B Allergy	March 19-April 6, full time	225.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital At: Kings County Hospital	Allergy I Allergy II	April, 9 sessions, part time April, 8 sessions, part time	20.00 20.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: University of Pittsburgh School of Medicine	Diseases due to Immune Mechanisms	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
	ANATOMY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	Anatomy of the Extremities of the Cadaver	March 14, 10 weeks, 10 sessions, part time	125.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	General Anatomy	Time arranged	Arranged
	Surgical Anatomy	January-June, part time	150.00
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass.	Surgical Anatomy	March 5-April 27, 8 weeks, part time	200.00 [1]
	Neuro-Anatomy	June 4-23, 3 weeks, full time	100.00 [1]
	Anatomy of the Head and Neck	Jan. 2-Feb. 17, full time, 7 weeks	300.00 [1]
	Anatomy of the Temporal Bone	Feb. 19-March 31, full time, 6 weeks	300.00 [1]
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Surgical Anatomy	March 5-April 27, part time	250.00 [1]
Michigan State Medical Society, 202 Olds Tower, Lansing, Mich At: Book Cadillac Hotel, Detroit	Michigan Postgraduate Clinical Institute	March 14-16, full time March 12-June 9, 36 sessions, part time	Not given 50.00 each section
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Regional Anatomy (Head and Neck, Trunk, Extremities and Back)		
	Surgical Anatomy	2nd and 3rd quarters, 24 weeks, 24 sessions, part time	70.00
Essex County Medical Society, Newark, N. J. At: Newark City Hospital	Surgical Anatomy	February 19, 12 sessions, part time	150.00
Cornell University Medical College, 1300 York Ave., New York	Surgical Anatomy	June 1-30, full time	200.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY—Continued		
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Anatomy of the Abdomen	Arranged, 100 hours	$150.00
	Applied Anatomy for the General Surgeon	Arranged, 250 hours	375.00
	Anatomy of the Thorax	Arranged, 100 hours	150.00
	Applied Anatomy for the Anesthetist	Arranged, 125 hours	275.00
	Applied Anatomy for the Otolaryngologist	Arranged, 150 hours	275.00
	Applied Anatomy of the Urogenital System	Arranged, 130 hours	300.00
	Anatomy for the Orthopedic Surgeon	Arranged, 100 hours	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Head and Neck Dissection	Arranged, 4 weeks, part time	150.00
	Surgical Anatomy of Nose and Accessory Sinuses	Arranged, 4 weeks, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	660-A Anatomy and Physiology of the Autonomic Nervous System and Its Clinical Application	March 5-10, full time	Not given
Western Reserve University, Department of Anatomy, 2109 Adelbert Rd., Cleveland 6, Ohio	Anatomy 11-G	Continuously, October 1 to April 30, part time	70.00 per month
Baylor University College of Medicine, 1200 M.D. Anderson Blvd., Houston 5, Texas	Anatomy of the Female Pelvis for General Practitioners	March 27-April 24, 5 sessions, part time	25.00
	ANESTHESIOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	Practical 2 week Course in Spinal and Intravenous Anesthesia	Every 2 weeks by appointment, full time	150.00
	Practical 1 month Course in Nitrous Oxide and Ether Anesthesia	1st of every month by appointment, full time	125.00
	Practical 1 month Course in Ether, Nitrous Oxide, Ethylene and Cyclopropane Anesthesia	1st of every month by appointment, full time	200.00
	Practical 2 week Course in Endotracheal Anesthesia	Every 2 weeks by appointment, full time	150.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Hospital of Brooklyn	Anesthesiology	April, 6 weeks, 12 sessions, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Clinical Anesthesiology	Arranged, 3 months, full time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York, N. Y.	Applied Anesthesia	January and April, 3 months, full time	300.00
	Anesthetic Technique	January and April, 6 weeks, full time	100.00
	Regional and Spinal Anesthesia	January and April, 6 weeks, full time	100.00
New York State Society of Anesthesiologists, 137 W. 11th St., New York, N. Y. At: Various Hospitals in New York State	Postgraduate Training Program in Anesthesiology	Continuously, variable time	None
New York University Post-Graduate Medical School, 477 First Ave., New York, N. Y. At: Bellevue Hospital	512-C Regional Anesthesiology	April 30-May 11, full time	200.00
University of Pennsylvania, Graduate School of Medicine, Philadelphia 4, Pa. At: Graduate Hospital	Segmental Neuralgias Relief by Regional Anesthesia	Arranged, 3 weeks, full time	200.00
	ARTHRITIS		
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Rheumatic Disease	February 5-7, full time	30.00 [1]
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Hospital of Brooklyn	Arthritis	April, 8 weeks, 8 sessions, part time	30.00
Council of Rochester Regional Hospitals, 133 East Ave., Rochester 4, N. Y. At: The Genesee Hospital	Arthritis	June, 2 days, full time	None
	BACTERIOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Review of Microbiology (bacteriology) A Basic Course	March 15, 5 sessions, part time	75.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Virology	March 12-June 9, 36 sessions, part time	Not given
New York University Postgraduate Medical School, 477 First Ave., New York At: Bellevue Hospital	432-A Viruses and Virus Diseases	April 2-June 9, full time	211.00
	BASIC SCIENCE		
University of Colorado Medical Center, 4200 East Ninth Ave., Denver	Applied Medical Science	January 2-June 11, 5¾ months, full and part time	234.00 non residents 204.00 Colorado residents
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	Basic Sciences applied to Obstetrics and Gynecology	January-June, full time	375.00
	BIOCHEMISTRY		
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Clinical Biochemistry	April, 10 weeks, 10 sessions, part time	30.00
University of Texas Postgraduate School of Medicine, 207 A Hermann Professional Bldg., Houston, Texas At: M. D. Anderson Hospital	Biometrics	February 1, 10 weeks, 10 sessions	25.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
CARDIOVASCULAR DISEASES			
College of Medical Evangelists, 312 N. Boyle Avenue, Los Angeles 33, Calif.	Cardiology	January 9-March 13, 10 weeks, 10 sessions, part time	$50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Cardiovascular Disease	April 11, 10 weeks, 10 sessions, part time	80.00
Indiana University School of Medicine, 1040 W. Michigan, Indianapolis, Ind.	Postgraduate Symposium on the Heart	Feb. 14, 1951, full time	None
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	Cardiology	Feb. 19-March 2	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston, Mass.			
At: Beth Israel Hospital	Cardiology 1	January 29-May 12, 3½ months, full time	500.00 [1]
At: Peter Bent Brigham Hospital	Clinical Heart Disease	July 2-31, full time	200.00 [1]
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Cardiology	March 12-16, full time	40.00 [1]
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich.			
At: University Hospital	Diseases of the Heart	March 19-23, 5 days, full time	30.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Cardiovascular Diseases	February 15-17, full time	20.00
	Cardiovascular Diseases for General Physicians	May 24-26, full time	20.00
St. Francis Sanatorium for Cardiac Children, Roslyn, N. Y.	Comprehensive PG course in Rheumatic Fever and Rheumatic Heart Disease	June 4-15, full time	100.00
Columbia University, 630 W. 168th St., New York, N. Y.	Medicine PM 31 Cardiovascular Diseases	January 26-March 24, part time	125.00
	Medicine PM 46 Bedside Clinics in Heart Disease	February 19-April 9, part time	30.00
	Medicine PM 48 Bedside Diagnosis and Treatment of Heart Disease with Special Emphasis on Measurements of the Circulatory Dynamics	February 6-April 10, part time	45.00
At: Montefiore Hospital	Medicine PM 62 Supplementary Cardiology	January 30-June 5, part time	150.00
	Medicine PM 63 Advanced Cardiology	January 30-June 5, part time	250.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Cardiology	Continuous (except July and August) 20 weeks, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks, part time	75.00
New York State Department of Health, Albany 1, N. Y.	Diseases of Heart and Vascular System	May 7-June 1, 4 weeks	50.00
At: New York University Postgraduate Medical School		April 2-6	25.00
		April 9-13	25.00
		April 16-20	10.00
At: Columbia University, Mt. Sinai Hospital	Diseases of Heart and Vascular System	January 26-March 24, 9 sessions	15.00
		January 8-13	5.00
		January 15-19	5.00
New York University Postgraduate Medical School, 477 First Ave., New York			
At: Beth Israel Hospital	631-B Cardiovascular Disease	March 29-June 14, 12 sessions, part time	50.00
At: University Hospital	5425-A Cardiology	May 7-June 1, full time	250.00
Cleveland Heart Society, 613 Public Square Bldg., Cleveland 13			
At: Western Reserve University and various Cleveland Hospitals	Resuscitation	Dec. 14-16, Jan. 25-27, Feb. 15-17, Mar. 15-17	Not given
Southwestern Ohio Society of General Physicians, Cincinnati, Ohio			
At: U-Cincinnati College of Medicine	Cardiology	January 25-March 1, 6 weeks, 6 sessions, part time	10.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.	Modern Trends in Diagnosis and Treatment of Heart Disease	January 22-27	30.00 A.C.P. mbrs. 60.00 non-mbrs.
At: University of Southern California, Los Angeles	Physiological Approach to clinical problems in the Cardiovascular Diseases	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
University of Pennsylvania Graduate School of Medicine, Philadelphia 4, Pa.	Cardiology	January and April, 8 weeks, 8 sessions, part time	80.00
CIVILIAN DEFENSE			
Southwestern Ohio Society of General Practice, Cincinnati, Ohio			
At: Hotel Gibson, Cincinnati	Civilian Defense	January 14, 1 day	No fee
DERMATOLOGY AND SYPHILOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Dermatology	January 3-March 21, 12 sessions, part time	40.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	12 month Clinical Course in Dermatology	By appointment, full time	1,000.00
	Clinical Refresher Course in Dermatology	Every Monday, 2 or more weeks, full time	75.00 Two weeks 125.00 Four weeks
	Intensive 2 weeks course in Dermatology	May 7, full time	100.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Clinical Dermatology Refresher Course in Diseases of the Skin for General Practitioners	April 2-6, full time	50.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Dermatology II	April 2-6, full time	40.00 [1]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.			
At: Receiving Hospital	Dermatology	January and April, 12 weeks, part time	15.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
DERMATOLOGY AND SYPHILOLOGY—Continued			
University of Minnesota, Center for Continuation Study, Minneapolis 14, Minn.	Dermatology for General Physicians	April 5-7, full time	$20.00
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Dermatology PM 31 Occupational Diseases of the Skin	January 10-February 2, part time	15.00
	Dermatology PM 32 Venereal and Skin Diseases	May 15-25, part time	30.00
At: Montefiore Hospital	Dermatology PM 60A Common Skin Diseases and Treatment	March 5-May 28, part time	50.00
Cornell University Medical College, 1300 York Ave., New York	Exfoliative Cytology (Cytologic Diagnosis)	Spring, 2 weeks, full time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York, N. Y.	Dermatology and Syphilology for the General Practitioner	Arranged, 5 days, full time	75.00
	Dermatology and Syphilology for specialists	Arranged, 5 days, full time	75.00
	Dermatologic Histopathology	Arranged, 5 days, full time	75.00
New York University Postgraduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	522-A Seminar in Dermatology and Syphilology	January 15-19, full time	100.00
	523-A Symposium on Dermatology and Syphilology (for Dermatologists)	May 21-25, full time	100.00
Baylor University College of Medicine, 1200 M.D. Anderson Blvd., Houston, Texas	Diagnosis and Treatment of Common Skin Disorders	January 9-February 13, 6 sessions, part time	30.00
DIABETES			
University of Florida, Department of Medicine, Graduate School, Jacksonville, Fla. At: Lakeland, Fla.	Seminar on Diabetes	January 25-26	10.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Medicine and Surgical Diabetes	March 21, 10 weeks, 10 sessions, part time	80.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Diabetes	March 19-21, full time	30.00 [1]
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Sanitarium and Hosp. for Chronic Diseases	Complications of Diabetes Mellitus	April, 12 weeks, 12 sessions, part time	20.00
Southwestern Ohio Society of General Physicians, Cincinnati, Ohio At: Hotel Gibson, Cincinnati, Ohio	Diabetes	April 8, 1 day	10.00
ELECTROCARDIOGRAPHY			
University of California Medical Center, San Francisco, Calif.	Electrocardiography Cardiology	January 29-February 2, full time	Not given
Emory University School of Medicine, 36 Butler St., S.E., Atlanta, Ga.	Electrocardiography	February 20-24, full time	50.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	2 week personal course in Electrocardiography and Heart disease	March 19-July 16, full time	150.00
	Personal course in Electrocardiography and Heart Disease	February 14, 10 weeks, 10 sessions, part time	125.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Electrocardiographic Interpretation	February 7-April 25, 12 sessions, part time	50.00
Indiana University School of Medicine, 1040 W. Michigan, Indianapolis, Ind.	Course in Electrocardiography	February 15-16, full time	25.00
University of Kansas Medical Center, Kansas City 3, Kans.	Electrocardiography	January 18-March 1, part time, 6 sessions	50.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Electrocardiography II	January 15-17, full time	25.00 [1]
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Electrocardiography for General Physicians	May 7-12, full time	35.00
Columbia University, 630 W. 168th St., New York, N. Y. At: Mt. Sinai Hospital	Medicine PM 41 Intensive Course in Elementary Electrocardiography	January 8-13, full time	60.00
	Medicine PM 42 Intensive Course in Advanced Electrocardiography	January 15-19, full time	40.00
Joint Committee on Post Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Basic Electrocardiography	April, 6 weeks, 12 sessions, part time	20.00
At: Jewish Hospital of Brooklyn	Electrocardiography for the General Practitioner	April, 6 weeks, 18 sessions, part time	30.00
At: Maimonides Hospital	Clinical Cardiology and Advanced Electrocardiography	April, 5 weeks, 10 sessions, part time	20.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York 29	Electrocardiography	Arranged, Spring, 2 weeks, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Electrocardiographic Interpretation	Arranged, 2 weeks, part time	75.00
New York University Postgraduate Medical School, 477 First Ave., New York At: Beth Israel Hospital	632-B Electrocardiography	March 29-June 14, part time, 12 sessions	35.00
At: University Hospital	5423-B Electrocardiography	April 9-13, full time	75.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City At: University Hospital	Electrocardiography	February 19-24, full time	50.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1	Electrocardiography	June 11-15, full time	50.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: Wayne University, Detroit, Mich.	Electrocardiography	March 26-31	30.00 A.C.P. mbrs. 60.00 non-mbrs.

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Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ELECTROCARDIOGRAPHY—Continued		
At: Massachusetts General Hospital, Boston	Electrocardiography: Basic Principles and Interpretation	Spring 1051, 1 week	$30.00 A.C.P. mbrs. 60.00 non-mbrs.
Medical Society of the State of Pennsylvania, 230 State St., Harrisburg At: Harrisburg Hospital	Special Course in Electrocardiography	May 17-June 29, 7 sessions, part time	25.00
	ELECTROENCEPHALOGRAPHY		
University of Pennsylvania Graduate School of Medicine, Philadelphia 4, Pa.	Electroencephalography	Arranged, 2 weeks, full time	200.00 [2]
	ENDOCRINOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Endocrinology	April 3-May 22, 8 sessions, part time	30.00
University of Southern California, 3518 University Ave., Los Angeles 7, Calif. At: San Diego, Calif.	Endocrinology	January 19, 12 sessions, 12 weeks	50.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	Sterility and Endocrinology	March 19-24, full time	100.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Endocrinology and Metabolism	March 26-30, 5 days, full time	30.00
Essex County Medical Society, Newark, N. J. At: Seton Hall University, So. Orange, N. J.	Endocrinology	January 8, 6 sessions, part time	40.00
Columbia University, 630 W. 168th St., New York, N. Y. At: Mt. Sinai Hospital	Medicine PM 38 Diseases of Metabolism	March 8-22, part time	40.00
	Medicine PM 39 Endocrinological Diseases	January 25-February 15, part time	30.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Endocrine Disorders in Children and Adolescents	April, 8 sessions, 8 weeks, part time	20.00
At: Jewish Hospital of Brooklyn	Gynecologic Endocrinology	April, 10 sessions, 10 weeks, part time	20.00
At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Endocrinology	April, 14 sessions, 7 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Endocrinology	Arranged, Spring, 2 weeks, full time	100.00
New York University Postgraduate Medical School, 477 First Ave., New York At: University Hospital	5122-B Endocrinology	April 23-27, full time	60.00
	567-C Gynecological Endocrinology	February 27-April 21, May 1-June 23 part time, 24 sessions	150.00
	ENDOSCOPY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	10 day practical Course in Cystoscopy	Jan. 8, Jan. 22, Feb. 5, Feb. 19, Mar. 5, Mar. 19, Apr. 2, Apr. 30, May 14, June 4, June 18, July 9, full time	150.00
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Massachusetts General Hospital	Endoscopy	January-July, 3 months, full time	375.00 [1]
Columbia University, 630 W. 168th St., New York At: Columbia Presbyterian Hospital	Medicine PM 2 Gastroscopy	Arranged, 2 months, part time	250.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Greenpoint Hospital	Gastroscopy	April, 6 sessions, 6 weeks	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Gastroscopy	Arranged, 2 weeks, part time	200.00
	Gastroscopy (Advanced)	Arranged, 5 weeks, part time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Culdoscopy	Arranged, 6 sessions, part time	100.00
	Bronchoscopy	Arranged, 4 weeks, part time	150.00
New York University Post Graduate Medical School, 477 First Ave., New York At: University Hospital	566-C Cystoscopy and Endoscopy	February 19-March 26, May 14-June 18 15 sessions, part time	100.00
Temple University, 3400 N. Broad St., Philadelphia 40, Pa.	Laryngology and Laryngeal Surgery	Arranged, 2 weeks, full time	250.00
	Bronchoesophagology	Arranged, 2 weeks, full time	250.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4, Pa.	Bronchoesophagology, Gastroscopy and Laryngeal Surgery	January and June, 2 weeks, full time	250.00
	FRACTURES		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	Intensive 2 weeks course in Fractures and Traumatic Surgery	March 19 and June 18, full time	125.00
	Special Course in Fractures	March 21, 10 weeks, 10 sessions	125.00
	Clinical Course in Fractures	1st of every week, 1 or 2 weeks, full time	50.00 1 week 100.00 2 weeks
University of Minnesota Center for Continuation Study, Minneapolis, Minn.	Fractures and Traumatic Surgery for General Physicians	March 26-28, full time	20.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: King County Hospital	Fractures	April, 10 sessions, 10 weeks	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Fractures and Allied Trauma	Arranged, Spring, 3 weeks, full time	200.00
	GASTROENTEROLOGY		
University of California Medical Center, San Francisco 22, Calif.	Clinical Science as applied to General Medicine Part III Gastroenterology	Feb. 5-April 9, part time, 10 sessions	Not given
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	2 week personal Course in Gastroscopy and Gastroenterology	March 5, May 14, June 11, July 16, full time	200.00
	2 week course in Gastroenterology	May 14, 2 weeks, full time	100.00
	Personal Course in Gastroenterology	April 11, 10 sessions, 10 weeks	100.00

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
GASTROENTEROLOGY—Continued			
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Diseases of the Gastrointestinal Tract	April 23-27, 5 days, full time	$30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich. At: Receiving Hospital	Gastroenterology	January and April, 12 weeks, part time	15.00
Columbia University, 630 W. 168th St., New York, N. Y. At: Mt. Sinai Hospital	Medicine PM 32 Gastrointestinal Diseases	January 24-March 21, part time	80.00
	Medicine PM 45 Intensive Course in Gastroenterology	April 2-6, full time	60.00
At: Montefiore Hospital	Medicine PM 70 Gastroenterology	January 30-May 15, part time	75.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Hospital of Brooklyn	Gastroenterology I	April, 6 weeks, 12 sessions	20.00
At: Jewish Sanitarium and Hospital for Chronic Diseases	Gastroenterology II	April, 6 weeks, 12 sessions	20.00
New York University Post Graduate Medical School, 477 First Ave., New York At: University Hospital	5421-B Gastroenterology	June 4-15, full time	115.00
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Gastroenterology	Arranged, Spring, 1 month, part time	100.00
GERIATRICS			
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Geriatrics for Physicians	January 4-6, full time	20.00
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Medicine PM 47 Geriatrics	February 1-May 24, part time	65.00
HEMATOLOGY			
University of California Medical School, University Extension, Los Angeles 24, Calif. At: Veterans Administration Center, Sawtelle, W. Los Angeles	Advanced Hematology	February 7-March 28, part time, 8 sessions	Not given
University of Southern California, 3518 University Ave., Los Angeles 7, Calif. At: Los Angeles County Hospital	Hematology #338	January 9-February 13, part time, 12 sessions	50.00
University of Florida Graduate School, Dept. of Medicine, Jacksonville, Fla.	Hematology Seminar	June 21-23, full time	25.00 [3]
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Hematology	April 4, 10 weeks, 10 sessions, part time	100.00
	1 week Personal course in Hematology	July 9, full time	100.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Hematology II	May 7-19, full time	100.00 [1]
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Diseases of the Blood and Blood forming organs	April 16-20, 5 days, full time	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Advanced Hematology	March 12-June 9, 12 sessions, part time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Hematology and Allergy for General Physicians	April 26-28, full time	20.00
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Medicine PM 35 Hematology	January 23-March 20, part time	60.00
	Medicine PM 66 Clinical Hematology	January 30-June 5, part time	75.00
At: Montefiore Hospital	Medicine PM 67 Advanced Hematology	February 6-May 15, part time	75.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Hospital of Brooklyn	Clinical Hematology	April, 8 sessions, part time	20.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4, Pa. At: Bryn Mawr Hospital, Bryn Mawr, Pa.	Clinical and Laboratory Hematology	February and April, 6 weeks, full time	200.00
HISTOLOGY			
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Histology	Arranged, 5 weeks, full time	300.00
INDUSTRIAL MEDICINE			
New York University Post Graduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	482-A Industrial Dermatoses	April 2-20, part time	100.00
	483-A The Pneumoconioses	March 12-April 6, part time	150.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh, Pa.	Graduate Course in Industrial Medicine	Continuously, 18 months	Fellowship grants
INTERNAL MEDICINE			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Differential Diagnosis and Treatment of Internal Disease	January 8-March 26, 12 weeks, part time	50.00
	Varicose Veins	March 1-April 5, 6 sessions, part time	25.00
Emory University School of Medicine, 36 Butler St., S. E., Atlanta, Ga. At: Grady Memorial Hospital	General Internal Medicine	2 weeks to 12 months, arranged	125.00 [4]
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	2 week Intensive Course in Internal Medicine	April 23, full time	75.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Recent Advances in Internal Medicine	April 30-May 12, full time	100.00
University of Kansas Medical Center, Kansas City 3, Kans.	Internal Medicine including Dermatology and Psychiatry	March 19-22, full time	25.00
Tulane University of Louisiana, School of Medicine, 1430 Tulane Ave., New Orleans, La.	Recent Advances in Internal Medicine	March 12-17, full time	50.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
INTERNAL MEDICINE—Continued			
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston, Mass.			
At: Boston City Hospital	Internal Medicine 2	June 1-August 31, 3 months, full time	$375.00 [1]
At: Massachusetts General Hospital	Internal Medicine 3	June 18-July 27, 6 weeks, full time	250.00 [1]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.			
At: Receiving Hospital	Medical Seminar	Quarterly, January and April, 12 sessions, part time	15.00
	Medical Conference	Quarterly, January and April, 12 sessions, part time	15.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14]			
At: Jewish Hospital of Brooklyn	Diarrheal Diseases	April, 10 weeks, 10 sessions	20.00
Columbia University, 630 W. 168th St., New York			
At: Mt. Sinai Hospital	Medicine PM 30 Symposium on Internal Medicine	January 22-March 24, full time	350.00
Cornell University Medical College, 1300 York Ave., New York			
At: Bellevue Hospital, Second Medical Division	Internal Medicine	Continuously, 1st of each month	500.00 6 mos.
		3 or 6 months, full time	250.00 3 mos.
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Internal Medicine	Monthly (except July and August) 1-2 months, full time	150.00 1 mo. 300.00 2 mos.
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Treatment of Varicose Veins	Arranged, 4 weeks, part time	50.00
New York University Post Graduate Medical School, 477 First Ave., New York			
At: Bellevue and University Hospitals	5419-A Symposium on Internal Medicine	June 18-29, full time	115.00 [5]
	5428-B Internal Medicine	March 5-May 25, 4, 8 or 12 wks., part time	250.00 [6]
Oklahoma State Medical Association, 1227 Classen, Oklahoma City, Okla.			
At: 40 Principal Towns and Cities in the State	Internal Medicine	10 weeks in each center, 1 lecture a week	20.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.	Internal Medicine	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.			
At: Boston University School of Medicine	Internal Medicine	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
At: Marquette University School of Medicine, Milwaukee	Internal Medicine	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
At: University of Oregon Medical School, Portland	Recent Progress in Internal Medicine	March 19-23, 5 days, full time	30.00 members 60.00 non-members
MALIGNANT DISEASES			
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis, Ind.	Postgraduate Symposium on Malignant Diseases	April 4-5, full time	None
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich.			
At: University Hospital	Cancer	January 16-19, 4 days, full time	25.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14]			
At: Brooklyn Cancer Institute	Newer Concepts in Diagnosis and Treatment of Neoplastic Diseases	April, 8 weeks, 16 sessions	30.00
Columbia University, 630 W. 168th St., New York, N. Y.			
At: Montefiore Hospital	Medicine PM 72 Neoplastic Diseases	February 6-June 5, part time	150.00
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Newer Concepts in the Physiology and Biochemistry of Cancer	Arranged, 6 weeks, part time	150.00
MEDICINE, GENERAL			
Medical College of Alabama, Birmingham, Ala.			
At: Selma, Ala.	Postgraduate Instruction for General Practitioners	Every 2 months, 1 session	15.00 per year
	Postgraduate Seminar	Every 2 months, 3 hours per week	15.00 per year
At: Medical College of Alabama	Postgraduate Seminar	January 14-16, full time	Not given
California Medical Association, 1000 N. Center, Stockton 3, Calif.			
At: Various Centers in Calif.	Medical and Surgical Institutes	January, February and March, 2 days in each center	3.00
Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles 5, Calif.			
At: San Fernando Branch, East Los Angeles Branch	Practical Medicine Lecture Series	Continuous, 3 hours per week	None
University of California Medical Center, San Francisco 22, Calif.			
At: Mt. Zion Hospital	Course for General Practitioners	March 5-9, full time	Not given
At: University Extension, Los Angeles	Mycotic Infections in Man	February 13-April 3, 8 sessions, part time	Not given
George Washington University School of Medicine, 1335 H St., N.W., Washington, D. C.	General Medicine	March 5-9, 5 days, full time	60.00
University of Florida Graduate School of Medicine, Jacksonville, Fla.			
At: George Washington Hotel	19th Annual Graduate Short Course	June 25-30, full time	10.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	MEDICINE, GENERAL—Continued		
Medical College of Georgia, University Place, Augusta	Refresher Course for General Practitioners	March 20-23, full time	$30.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Biochemical Background of Clinical Medicine, a Basic Course	March 14, 10 weeks, 10 sessions	100.00
	Physical Diagnosis	March 14, 10 weeks, 10 sessions	80.00
	Intensive Personal Course in Liver and Biliary Tract Diseases	June 4, 1 week, full time	100.00
	Personal Course in Medical Emergencies, Diagnosis and Treatment	March 14, 10 weeks, 10 sessions	80.00
Chicago Medical Society, 30 N. Michigan Ave., Chicago 2, Ill. At: Palmer House	Annual Clinical Conference	March 6-9, full time	5.00 non-members
Illinois Academy of General Practice, Blue Island, Ill. At: Rockford, Peoria, Bloomington, Kankakee, Joliet, Belleville and Herrin, 3 in Cook County	Postgraduate School	40 weeks, forty hours, once a week	35.00 members AAGP 75.00 non-members
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	The Specialties as Applied to General Practice	April 9-14, full time	50.00
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Rheumatic Disease	April 2-6, 5 days, full time	30.00
Michigan State Medical Society, 202 Olds Tower, Lansing, Mich. At: Book Cadillac Hotel, Detroit	Michigan Postgraduate Clinical Institute	March 14-16, full time	Not given
Atlantic City Hospital, Atlantic City, N. J.	Recent Advances in General Practice	Continuously, 5 days, full time	None
Albany Medical College, Albany, N. Y.	Medicine (including Ekg., Endocrine and Metabolic Disorders, Chest Diseases and Hematology)	January 4, 4 to 7 weeks, part time	Variable
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Medicine PM 33 Diseases of the Liver	January 22-February 5, part time	35.00
	Medicine PM 34 Diseases of the Kidneys	February 19-March 1, part time	35.00
	Medicine PM 40 Principles and Practices of Diet Therapy	February 19-March 26, part time	20.00
	Medicine PM 49 Diagnosis and Treatment of Ambulatory Patients	February 7-April 13, part time	30.00
At: Montefiore Hospital	Medicine PM 65 Peripheral Vascular Diseases	February 8-June 7, part time	75.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	General Practitioner's Course	Arranged, 4 weeks, full time	100.00
	General Medicine	Arranged, 4 weeks, full time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York			
At: Bellevue and University Hospitals	5414-B Arthritis and Allied Rheumatic Disorders	February 26-March 16, 3 weeks, full time	125.00
	5418-B Peripheral Vascular Disease	April 2-6, full time	75.00
	5424-B Nephritis and Hypertension	April 16-20, full time	60.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Peripheral Vascular Diseases I	April, 10 weeks, 10 sessions	30.00
At: Jewish Hospital of Brooklyn	Peripheral Vascular Diseases II	April, 5 weeks, 10 sessions	20.00
	Hypertension and Nephritis	April, 8 sessions, 8 weeks	20.00
Duke University School of Medicine, Durham, N. C. At: Duke Hospital	Refresher Course for General Practitioners	March 19-23 and June 11-15, 5 days, full time	25.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: New York University-Bellevue and Goldwater Hospitals	Dynamic Therapeutics in Chronic Diseases	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
Medical Society of the State of Pennsylvania, 230 State St., Harrisburg, Pa. At: 10 centers in State	Graduate Education Institute	Spring 1951, 5 sessions in each center	25.00
Dallas Southern Clinical Society, 433 Medical Arts Bldg., Dallas 1, Texas	Clinical Conference	March 26-29, full time	Not given
	Postgraduate Course	January 8-10, full time	Not given
Mid-South Postgraduate Assembly, 869 Madison Ave., Memphis, Tenn. At: Peabody Hotel, Memphis	Mid-South Post-Graduate Medical Assembly	February 13-16, full time	10.00
Postgraduate Medical Assembly of South Texas, 229 Medical Arts Bldg., Houston, Texas At: Shamrock Hotel, Houston, Texas	17th Annual Meeting	July 23-25, 3 days, full time	20.00
Prairie View Post Graduate Medical Assembly At: Prairie View A. and M., College, Texas	Prairie View Postgraduate Medical Assembly	1st week in March, 5 days, full time	None
	NUCLEAR SCIENCE		
University of Michigan School of Public Health, Ann Arbor, Mich.	Radiological Health	February 5-8, full time, 4 days	Not given
Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn.	Radioisotope Techniques	January thru June, 4 weeks, full time	25.00
	Advanced Medical Course (Radioisotope Field)	February 5-19, 2 weeks, full time	25.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NUCLEAR SCIENCE—Continued			
University of Texas Postgraduate School of Medicine, 207 A. Hermann Professional Bldg., Houston, Texas At: M. D. Anderson Hospital	Advanced Course in Radiological Physics	February, 4 weeks, 4 sessions	$5.00
NEUROLOGY AND PSYCHIATRY			
Los Angeles Institute for Psychoanalysis, 407 Commercial Center St., Beverly Hills, Calif.	Professional School Courses	Arranged, 6 months, part time	232.00
University of Colorado Medical Center, 4200 East Ninth Ave., Denver	Psychosomatic Medicine	February, 1 week, full time	None
Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn. At: Connecticut State Hospital, Middletown	Psychological Aspects of Behavior and Clinical Psychology	January 8-February 5, part time	5.00
At: U. S. Veterans Hospital, Newington, Conn.	Classics of Psychoanalysis	January 5-February 16, part time	5.00
At: New Britain Memorial Hospital, New Britain, Conn.	Geriatric Psychiatry	March 7-April 4, part time	5.00
At: Hartford Hospital	Psychiatry in the Practice of Medicine and Surgery	March 2-April 6, part time	5.00
At: Southbury Training School	Pediatric Neurology	April 9-30, part time	5.00
At: Yale University	Forensic Psychiatry	March 5-26, part time	5.00
	Pediatric Psychiatry	January 3-February 14, part time	5.00
Catholic University of America, Washington 17, D. C.	Seminar in Psychotherapy I	February 1-May 15, part time, 15 sessions	30.00 [1]
	Child Psychiatry II	February 1-May 15, part time, 15 sessions	30.00 [1]
At: St. Elizabeth's Hospital, Washington, D. C.	Psychopathology	February 1-May 15, part time, 15 sessions	30.00 [1]
	Clinical Psychiatry	February 1-May 15, part time, 15 sessions	30.00 [1]
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Neuropathology	By appointment	20.00 per hour
	Personal Course in Clinical Neurology	March 14, 10 sessions, 10 weeks	80.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Rorschach Test Seminar	June 4-8, full time	50.00
University of Kansas Medical Center, Kansas City 3, Kans.	Applied Neurology	April 30-May 3, full time	25.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	Psychiatry and Neurology	June 18-23, full time	50.00
Massachusetts Dept. of Mental Health, Boston, Mass. At: Boston Psychopathic Hospital	Postgraduate Seminar in Neurology and Psychiatry	March 14-May 2, 8 sessions, part time	None
At: Metropolitan State Hospital	Review Course in Basic Neurology and Psychiatry	March 2-May 11, part time, 11 sessions	None
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Clinical Neurology	May 14-17, 4 days, full time	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Problems in Neurology	March 12-June 10, 12 sessions, part time	35.00
University of Minnesota, Center for Continuation Study, Minneapolis 14, Minn.	Clinical Neurology	January 29-February 10, full time	70.00
Columbia University, 630 W. 168th St., New York At: Columbia Presbyterian Medical Center	Neurology PM 2 Clinical Electroencephalography and Electromyography	Any 3 months between Oct. 1 and March 31, full time	150.00
At: Mt. Sinai Hospital	Neurology PM 30 Clinical Neurology	April 9-13, full time	60.00
	Psychiatry PM-30 Psychiatry in General Medicine	January 9-May 22, part time	100.00
	Neurology PM 34 Laboratory Training in Clinical Electroencephalography	Any three months, full time	150.00
At: Montefiore Hospital	Neurology PM 61 Advanced Neurology	January 2-March 30, April 2-June 29, full time	150.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Psychoanalysis and Psychiatry	January 8, 15 sessions, part time	40.00
New York University Postgraduate Medical School, 477 First Ave., New York At: Bellevue Hospital	642-A Electroencephalography	January 29-March 24, part time	300.00
	643-A Treatment Methods in Psychiatry	January 15-March 10, part time	300.00
	644-A Psychiatry in Industry	March 5-17, part time	150.00
	645-A Psychiatry and the Law	January 22-March 22, part time	300.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Sanitarium and Hosp. for Chronic Diseases	Clinical Neurology	April, 8 sessions, 8 weeks	20.00
At: Jewish Hospital of Brooklyn	Child Psychiatry	April, 10 sessions, 10 weeks	20.00
Council of Rochester Regional Hospitals, 133 East Ave., Rochester 4, N. Y. At: Strong Memorial Hospital	Psychiatry in General Practice	April, 5 days, full time	None
American Institute for Psychoanalysis, 220 W. 98th St., New York	Readings in Psychoanalysis Part III The Works of Karen Horney	February 9, 20 weeks, part time	40.00
	Psychiatry and Psychoanalysis	February 15, 15 weeks, part time	30.00
	Continuous Case Seminar	February 12, 10 weeks, part time	30.00 [7]
	Clinical Conferences	February 15, 10 weeks, part time	30.00 [7]
	The Psychoanalytic Process	February 13, 15 weeks, part time	45.00 [7]
	The Psychoanalytic Relationship	February 16, 12 weeks, part time	36.00 [7]
	Love and Sex in Health and Neurosis	February 5, 15 weeks, part time	17.50
	Seminar on Personal Case Histories	February 6, 15 weeks, part time	30.00
Postgraduate Center for Psychotherapy, 218 E. 70th St., New York 21, N. Y.	Psychological Tests in Psychotherapy	Dec. 15-Jan. 19, 5 weeks, part time	15.00
	Psychopathology and Psychodynamics of Obsessions and Compulsions	February 10, 1 day	10.00
	Crime and Psychiatry	February 17, 1 day	10.00
	Psychopathology and Psychotherapy of Homosexuality	February 3, 1 day	10.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Medical College of Georgia, University Place, Augusta	Refresher Course for General Practitioners	March 20-23, full time	$10.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Biochemical Background of Clinical Medicine, a Basic Course	March 14, 10 weeks, 10 sessions	100.00
	Physical Diagnosis	March 14, 10 weeks, 10 sessions	80.00
	Intensive Personal Course in Liver and Biliary Tract Diseases	June 4, 1 week, full time	100.00
	Personal Course in Medical Emergencies, Diagnosis and Treatment	March 14, 10 weeks, 10 sessions	80.00
Chicago Medical Society, 30 N. Michigan Ave., Chicago 2, Ill. At: Palmer House	Annual Clinical Conference	March 6-9, full time	5.00 non-members
Illinois Academy of General Practice, Blue Island, Ill. At: Rockford, Peoria, Bloomington, Kankakee, Joliet, Belleville and Herrin, 3 in Cook County	Postgraduate School	40 weeks, forty hours, once a week	35.00 members AAGP 75.00 non-members
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	The Specialties as Applied to General Practice	April 9-14, full time	50.00
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Rheumatic Disease	April 2-6, 5 days, full time	30.00
Michigan State Medical Society, 202 Olds Tower, Lansing, Mich. At: Book Cadillac Hotel, Detroit	Michigan Postgraduate Clinical Institute	March 14-16, full time	Not given
Atlantic City Hospital, Atlantic City, N. J.	Recent Advances in General Practice	Continuously, 5 days, full time	None
Albany Medical College, Albany, N. Y.	Medicine (including Ekg., Endocrine and Metabolic Disorders, Chest Diseases and Hematology)	January 4, 4 to 7 weeks, part time	Variable
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Medicine PM 33 Diseases of the Liver	January 22-February 5, part time	35.00
	Medicine PM 34 Diseases of the Kidneys	February 19-March 1, part time	35.00
	Medicine PM 40 Principles and Practices of Diet Therapy	February 19-March 26, part time	20.00
	Medicine PM 49 Diagnosis and Treatment of Ambulatory Patients	February 7-April 13, part time	30.00
At: Montefiore Hospital	Medicine PM 65 Peripheral Vascular Diseases	February 8-June 7, part time	75.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	General Practitioner's Course	Arranged, 4 weeks, full time	100.00
	General Medicine	Arranged, 4 weeks, full time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	5414-B Arthritis and Allied Rheumatic Disorders	February 26-March 16, 3 weeks, full time	125.00
	5418-B Peripheral Vascular Disease	April 2-6, full time	75.00
	5424-B Nephritis and Hypertension	April 16-20, full time	60.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Peripheral Vascular Diseases I	April, 10 weeks, 10 sessions	30.00
At: Jewish Hospital of Brooklyn	Peripheral Vascular Diseases II	April, 5 weeks, 10 sessions	20.00
	Hypertension and Nephritis	April, 8 sessions, 8 weeks	20.00
Duke University School of Medicine, Durham, N. C. At: Duke Hospital	Refresher Course for General Practitioners	March 19-23 and June 11-15, 5 days, full time	25.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: New York University-Bellevue and Goldwater Hospitals	Dynamic Therapeutics in Chronic Diseases	Spring 1951, 1 week	30.00 A.C.P. mbrs. 60.00 non-mbrs.
Medical Society of the State of Pennsylvania, 230 State St., Harrisburg, Pa. At: 10 centers in State	Graduate Education Institute	Spring 1951, 5 sessions in each center	25.00
Dallas Southern Clinical Society, 433 Medical Arts Bldg., Dallas 1, Texas	Clinical Conference	March 26-29, full time	Not given
	Postgraduate Course	January 8-10, full time	Not given
Mid-South Postgraduate Assembly, 899 Madison Ave., Memphis, Tenn. At: Peabody Hotel, Memphis	Mid-South Post-Graduate Medical Assembly	February 13-16, full time	10.00
Postgraduate Medical Assembly of South Texas, 229 Medical Arts Bldg., Houston, Texas At: Shamrock Hotel, Houston, Texas	17th Annual Meeting	July 22-25, 3 days, full time	20.00
Prairie View Post Graduate Medical Assembly At: Prairie View A. and M., College, Texas	Prairie View Postgraduate Medical Assembly	1st week in March, 5 days, full time	None
NUCLEAR SCIENCE			
University of Michigan School of Public Health, Ann Arbor, Mich.	Radiological Health	February 5-8, full time, 4 days	Not given
Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn.	Radioisotope Techniques	January thru June, 4 weeks, full time	25.00
	Advanced Medical Course (Radioisotope Field)	February 5-10, 2 weeks, full time	25.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NUCLEAR SCIENCE—Continued			
University of Texas Postgraduate School of Medicine, 207 A. Hermann Professional Bldg., Houston, Texas At: M. D. Anderson Hospital	Advanced Course in Radiological Physics	February, 4 weeks, 4 sessions	$5.00
NEUROLOGY AND PSYCHIATRY			
Los Angeles Institute for Psychoanalysis, 407 Commercial Center St., Beverly Hills, Calif.	Professional School Courses	Arranged, 6 months, part time	232.00
University of Colorado Medical Center, 4200 East Ninth Ave., Denver	Psychosomatic Medicine	February, 1 week, full time	None
Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn. At: Connecticut State Hospital, Middletown	Psychological Aspects of Behavior and Clinical Psychology	January 8-February 5, part time	5.00
At: U. S. Veterans Hospital, Newington, Conn.	Classics of Psychoanalysis	January 5-February 16, part time	5.00
At: New Britain Memorial Hospital, New Britain, Conn.	Geriatric Psychiatry	March 7-April 4, part time	5.00
At: Hartford Hospital	Psychiatry in the Practice of Medicine and Surgery	March 2-April 6, part time	5.00
At: Southbury Training School	Pediatric Neurology	April 9-30, part time	5.00
At: Yale University	Forensic Psychiatry	March 5-26, part time	5.00
	Pediatric Psychiatry	January 3-February 14, part time	5.00
Catholic University of America, Washington 17, D. C.	Seminar in Psychotherapy I	February 1-May 15, part time, 15 sessions	30.00 [1]
	Child Psychiatry II	February 1-May 15, part time, 15 sessions	30.00 [1]
	Psychopathology	February 1-May 15, part time, 15 sessions	30.00 [1]
At: St. Elizabeth's Hospital, Washington, D. C.	Clinical Psychiatry	February 1-May 15, part time, 5 sessions	30.00 [1]
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Neuropathology	By appointment	20.00 per hour
	Personal Course in Clinical Neurology	March 14, 10 sessions, 10 weeks	50.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Rorschach Test Seminar	June 4-8, full time	50.00
University of Kansas Medical Center, Kansas City 3, Kans.	Applied Neurology	April 30-May 3, full time	25.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, La.	Psychiatry and Neurology	June 18-23, full time	50.00
Massachusetts Dept. of Mental Health, Boston, Mass. At: Boston Psychopathic Hospital	Postgraduate Seminar in Neurology and Psychiatry	March 14-May 2, 8 sessions, part time	None
At: Metropolitan State Hospital	Review Course in Basic Neurology and Psychiatry	March 2-May 11, part time, 11 sessions	None
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Clinical Neurology	May 14-17, 4 days, full time	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Problems in Neurology	March 12-June 10, 12 sessions, part time	35.00
University of Minnesota, Center for Continuation Study, Minneapolis 14, Minn.	Clinical Neurology	January 29-February 10, full time	70.00
Columbia University, 630 W. 168th St., New York At: Columbia Presbyterian Medical Center	Neurology PM 2 Clinical Electroencephalography and Electromyography	Any 3 months between Oct. 1 and March 31, full time	150.00
At: Mt. Sinai Hospital	Neurology PM 30 Clinical Neurology	April 9-13, full time	60.00
	Psychiatry PM 30 Psychiatry in General Medicine	January 9-May 22, part time	100.00
	Neurology PM 34 Laboratory Training in Clinical Electroencephalography	Any three months, full time	150.00
At: Montefiore Hospital	Neurology PM 61 Advanced Neurology	January 2-March 30, April 2-June 29, full time	150.00
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Psychoanalysis and Psychiatry	January 8, 15 sessions, part time	40.00
New York University Postgraduate Medical School, 477 First Ave., New York At: Bellevue Hospital	642-A Electroencephalography	January 29-March 24, part time	200.00
	643-A Treatment Methods in Psychiatry	January 15-March 10, part time	200.00
	644-A Psychiatry in Industry	March 5-17, part time	150.00
	645-A Psychiatry and the Law	January 22-March 22, part time	200.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Sanitarium and Hosp. for Chronic Diseases	Clinical Neurology	April, 8 sessions, 8 weeks	20.00
At: Jewish Hospital of Brooklyn	Child Psychiatry	April, 10 sessions, 10 weeks	20.00
Council of Rochester Regional Hospitals, 133 East Ave., Rochester 4, N. Y. At: Strong Memorial Hospital	Psychiatry in General Practice	April, 5 days, full time	None
American Institute for Psychoanalysis, 220 W. 98th St., New York	Readings in Psychoanalysis Part III The Works of Karen Horney	February 9, 20 weeks, part time	40.00
	Psychiatry and Psychoanalysis	February 15, 15 weeks, part time	30.00
	Continuous Case Seminar	February 12, 10 weeks, part time	30.00 [7]
	Clinical Conferences	February 15, 10 weeks, part time	30.00 [7]
	The Psychoanalytic Process	February 13, 15 weeks, part time	45.00 [7]
	The Psychoanalytic Relationship	February 16, 12 weeks, part time	36.00 [7]
	Love and Sex in Health and Neurosis	February 5, 15 weeks, part time	17.50
	Seminar on Personal Case Histories	February 6, 15 weeks, part time	30.00
Postgraduate Center for Psychotherapy, 218 E. 70th St., New York 21, N. Y.	Psychological Tests in Psychotherapy	Dec. 15-Jan. 19, 5 weeks, part time	15.00
	Psychopathology and Psychodynamics of Obsessions and Compulsions	February 10, 1 day	10.00
	Crime and Psychiatry	February 17, 1 day	10.00
	Psychopathology and Psychotherapy of Homosexuality	February 3, 1 day	10.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
Postgraduate Center for Psychotherapy, 215 E. 70th St., New York	Projective Techniques in Child Psychotherapy Part I	January 20, 1 day	$10.00
	Projective Technique in Child Psychotherapy Part II	January 27, 1 day	10.00
	Advanced Techniques of Dream Interpretation	December 13-January 17, 5 sessions, part time	40.00
	Problems of Adolescence	January 13, 1 day	10.00
	A Community Psychotherapeutic Center	December 13-January 17, 5 sessions, part time	15.00
	Techniques of Casework Psychotherapy	December 13-January 17, 5 sessions, part time	15.00
Postgraduate Center for Psychotherapy, Inc., 215 E. 70th St., New York 21, N. Y.	Principles of Child Psychiatry	Feb 9-June 1, 15 sessions	40.00
	Clinical Conference	Feb. 7-May 23, 15 sessions	25.00
	Continuous Case Seminar	Feb. 6-May 22, 15 sessions	35.00
	Readings in Psychiatry	Feb. 9-July 1, 8 sessions	20.00
	Integrative Psychotherapy	Feb. 6-March 6, 5 sessions	20.00
	Basic Neuropsychiatry	Feb. 16-May 25, 7 sessions	20.00
	Research Techniques in Community Health Problems	Feb. 6-Apr. 17, 10 sessions	30.00
	Short Term Psychotherapy Utilizing Psychoanalytic Techniques	Feb. 7-Apr. 18, 10 sessions	40.00
	Somatic Complications occuring during Psychotherapy	Feb. 8-Mar. 9, 5 sessions	15.00
	Workshop in Community Project	Arranged, February 9	20.00
	Supervisory Techniques in Psychotherapy	Apr. 23-May 23, 5 sessions	20.00
	Studies in Community Mental Health	Mar. 16-June 1, 10 sessions	25.00
	Clinical Conference in the Psychoanalysis of Groups	March 1-May 24, 12 sessions	30.00
	Treatment of the Alcoholic	March 3, 1 day	10.00
	Anthropology and its relationship to Psychiatry	March 10, 1 day	10.00
	The Treatment of Schizophrenia (Psychiatrists only)	March 17, 1 day	10.00
	The significance of spontaneous Art Productions in Diagnosis and Therapy	April 7, 1 day	10.00
	The treatment of Depression (Psychiatrists only)	April 14, 1 day	10.00
	Public Health Aspects of Psychiatry	April 21, 1 day	10.00
	The Management of Family Problems	May 12, 1 day	10.00
	Psychodrama and Sociadrama	May 19, 1 day	10.00
	Workshop in advanced Projective Techniques	Feb. 8-May 31, 15 sessions	40.00
	Psychotherapy with Adults	Feb. 8-May 31, 15 sessions	80.00
	Psychiatric Seminar for Physicians	Feb. 8-May 31, 15 sessions	80.00
	Anthropological Aspects of Psychiatry	Feb. 8-April 26, 10 sessions	30.00
	Mental Health in the School	Feb. 8-May 31, 15 sessions	25.00
	Seminar on Diagnosis and Treatment Planning of Child Psychotherapy	Feb. 8-May 31, 15 sessions	80.00
	Advanced Psychotherapeutic Techniques	Feb. 7-April 18, 10 sessions	40.00
	Continuous Case Seminar	Feb. 7-May 23, 15 sessions	30.00
Medical College of the State of South Carolina, Charleston, S. C.	Neuro-Psychiatric Seminar	March, 2 days	No fee
NUTRITION			
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Nutrition	Arranged, 1 month, part time	150.00
OBSTETRICS AND GYNECOLOGY			
University of Colorado Medical Center, 4200 East Ninth Ave., Denver, Colo	Postgraduate Course in Obstetrics and Gynecology	Last week in April, 2 days	20.00
State University of Iowa College of Medicine, Iowa City, Iowa	Conference in Obstetrics and Gynecology	March, 2 days, full time	10.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	Personal Course in Vaginal Approach to Pelvic Surgery	Mar. 5, Apr. 2, May 7, June 11, 1 week, full time	100.00
	Intensive 2 week course in Gynecology	Feb. 19, Mar. 19, April 16 and June 18, full time	150.00
	Personal Course in Office Gynecology	Jan. 10, Feb. 7, Apr. 4, and May 16, 4 weeks, 4 sessions	80.00
	Personal course in Gynecologic Surgery	Jan. 11, Feb. 8, Apr. 5, May 17, 4 weeks, part time	80.00
	Intensive 2 week Course in Obstetrics	Mar. 5, Apr. 2 and June 4, full time	150.00
	Personal Course in Surgical Obstetrics	Jan. 3, April 4 and June 6, 4 sessions, 4 weeks	100.00
	Personal Course in General and Office Obstetrics	Jan. 31, May 2, July 11, 4 weeks, 4 sessions	80.00
State University of Iowa College of Medicine, Iowa City, Iowa	Conference in Obstetrics and Gynecology	March, 2 days, full time	10.00
Tulane University of Louisiana School of Medicine, 1430 Tulane Ave., New Orleans, La.	Obstetrics for Specialists	April 2-7, full time	50.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore At: University Hospital	Gynecology and Obstetrics (Clinical)	Arranged, 12 weeks, full time	150.00
	Gynecology, Oncology and Female Urology	Arranged, 10 weeks, full time	125.00
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Boston Lying-in Hospital	Clinical Obstetrics	April and May, 1 month, full time	150.00 [1]
At: Massachusetts General Hospital	Gynecology 1	Throughout the year, 3-12 months, full time	800.00 [1] 12 months

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
At: Free Hospital for Women	Gynecology 2	June, 1 month, full time	$150.00 [1]
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich.			
At: Maternity Hospital	Obstetrics and Gynecology	February 19-March 3, 2 weeks, full time	100.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Gynecology for General Physicians	April 9-11, full time	20.00
Essex County Medical Society, Newark, N. J.			
At: Seton Hall University Campus	Gynecology 31G	February 24, 15 sessions, part time	100.00
Columbia University, 630 W. 168th St., New York			
At: Mt. Sinai Hospital	Gynecology PM 30 Recent Advances in Gynecology	March 26-31, full time	65.00
At: Margaret Hague Maternity Hospital	Obstetrics PM 80 Internship training	1st of Each Month, 3 months, full time	350.00
	Obstetrics PM 81 Observation course	1st of Each Month, 1 month, full time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Clinical Gynecology	Arranged, 6 weeks, part time	75.00
	Clinical and Operative (cadaver) Gynecology	Arranged, 6 weeks, part time	175.00
	Clinical Course in Office and General Obstetrics	Arranged, 4 weeks, part time	100.00
	Manikin Obstetrics	Arranged, 4 weeks, part time	150.00
	Obstetrics and Gynecology Including Manikin Ob. and Operative Gyn. (cadaver)	April, 2 months, full time	250.00
New York University Post-Graduate Medical School, 477 First Ave., New York	561-B Seminar in Gynecology	February 26-April 21, April 30-June 23 8 weeks, full time	300.00
At: University Hospital	562-B Gynecology Diagnosis and Office Treatment	January 29-February 21, April 30-May 21 10 sessions, part time	50.00
	563-B Gynecology Diagnosis and Office Treatment	January 15-February 19, April 2-May 4 15 sessions, part time	75.00
	568-C Vaginal Cytology (for specialists)	February 27-April 19, May 1-June 21 16 sessions, part time	100.00
	569-C Surgical Anatomy as applied to Gynecology (cadaver) for Specialists	January 30-February 27, April 3-28 12 sessions, part time	200.00
At: Beth Israel Hospital	684-B Gynecology for Specialists	February 5-May 25, 16 weeks, part time	250.00
	685-A Gynecology for General Practitioners	April 30-June 7, 12 sessions, part time	45.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14]			
At: St. John's Episcopal Hospital	Office Gynecology	April, 8 sessions, 8 weeks	20.00
At: Greenpoint Hospital	Sterility	April, 12 sessions, 12 weeks	40.00
At: State University Medical Center at New York, College of Medicine	Manikin	April, 8 weeks, 16 sessions	30.00
University of Oregon Medical School, 3181 S.W. Sam Jackson Park Rd., Portland 1	Obstetrics	February 5-7, full time	30.00
University of Washington School of Medicine, Seattle 5, Wash.	Postgraduate Course in Gynecology	April 2-5, full time	40.00
OPHTHALMOLOGY AND OTOLARYNGOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Ophthalmology	January 30-March 20, 8 weeks, part time	30.00
	Histology and Histopathology of the Eye	February 23-June 20, 17 sessions, part time	75.00
Research Study Club of Los Angeles, Los Angeles, Calif.			
At: Elk's Club, Los Angeles	20th Annual Mid-Winter Postgraduate Convention in Ophth. and Oto.	January 15-26, 2 weeks, full time	125.00
Stanford University School of Medicine, 2398 Sacramento St., San Francisco	Stanford Spring Postgraduate Conference in Ophthalmology	March 19-23, full time	75.00
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago 14, Ill.	Postgraduate Conference in Neuromuscular Anomalies of the Eyes (for Specialists)	April 8-13, full time	75.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	2 week Clinical Course in Otolaryngology	1st of every week, full time	50.00
	2 weeks Clinical Course in Ophthalmology	1st of every week, full time	50.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12, Ill.	Current trends in Otolaryngology	May, 1 week, full time	75.00
	Bronchoesophagology	February and May, 2 weeks, full time	150.00
Indiana University School of Medicine, Indianapolis, Ind.	Clinical and Anatomical Course in Otorhinolaryngology	April 2-14, full time	250.00
State University of Iowa College of Medicine, Iowa City, Iowa	Symposium on External Ocular Diseases (for Specialists)	March 20-21, full time	50.00
University of Kansas Medical Center, Kansas City 3, Kans.	Ophthalmology and Otorhinolaryngology	April 16-20, 5 days, full time	80.00
Tulane University of Louisiana School of Medicine, 1430 Tulane Ave., New Orleans, La.	Ocular Pharmacology and Therapeutics for Specialists	February 19-24, 1 week, full time	100.00
	Ocular Pathology for Specialists	February 12-17, 5 days, full time	100.00
Ophthalmic Study Council, 243 Charles St., Boston, Mass.	Lancaster Courses in Ophthalmology	June 26-Sept. 9, full time	300.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Ophthalmoscopy	April 30-May 25, 4 weeks, part time	50.00 [1]
	Neuroophthalmology	March 5-9, full time	75.00 [1]
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich.			
At: University Hospital	Ophthalmology Conference	April 23-25, 3 days, full time	25.00
Wayne University College of Medicine, 1512 St. Antoine, Detroit, Mich.	Basic Ophthalmology	September-June 8, full time [8]	900.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Ophthalmology for Specialists	January 22-27, full time	35.00
Columbia University, 630 W. 168th St., New York			
At: Columbia Presbyterian Medical Center	Otolaryngology PM 1 Bronchoscopy	April 9-27, part time	250.00
At: Montefiore Hospital	Ophthalmology PM 60 Elementary Ophthalmoscopy	January 5-March 2, part time	30.00
	Ophthalmology PM 61 Perimetry	March 12-May 7, part time	30.00
At: Mt. Sinai Hospital	Ophthalmology PM 39A Ophthalmoscopy in General Practice	February 5-April 2, part time	25.00
	Ophthalmology PM 43 Symposium in Ophthalmology	April 30-May 26, full time	200.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued			
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Advanced Physiological Optics	Arranged, 30 hours, part time	$100.00
	Operative Ophthalmology (cadaver)	Arranged, 4 weeks, part time	100.00
	Operative Otology (cadaver)	Arranged, 4 weeks, part time	100.00
	Operative Nose and Throat (cadaver)	Arranged, 4 weeks, part time	150.00
	Seminar in Otolaryngology and Ophthalmology	Arranged, 5 days, full time	50.00
	Clinical Ophthalmology	Arranged, 6 weeks or 3 months, part time	75.00 [9]
	Clinical Otolaryngology	Arranged, 6 weeks or 3 months part time	100.00 [10]
	Clinical Ophth. and Oto.	Arranged, 6 weeks or 3 months, full time	150.00 [11]
	Otolaryngology and Ophthalmology including cadaver, EENT and refraction	January and April, 3 months, full time	600.00
	Refraction	Arranged, 4 weeks, part time	100.00
	Advanced Otology	Arranged, 2 weeks, part time	250.00
	Ophthalmology including cadaver, ophth. and refraction	Arranged, 3 months, part time	300.00
	Motor Anomalies	Arranged, 4 weeks, part time	50.00
	Symposium on Otolaryngology and Ophthalmology	April 16-20, full time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York At: Bellevue Hospital	595-A Bronchoscopy, Esophagoscopy and Laryngeal Neck Surgery	January 15-26, full time	200.00
	571-A Motor Anomalies of the Eye Part 1 (for Specialists)	March 5-10, full time	100.00
	572- A Motor Anomalies of the Eye Part 2 (for Specialists)	March 12-16, full time	75.00
	573-B Ophthalmic Neurology (for Specialists)	February 26-March 2, part time	50.00
	574-B Surgery of the Eye (for Specialists)	March 19-24, full time	100.00
	575-B Differential Diagnosis with the Slit Lamp (for Specialists)	February 26-March 2, part time	75.00
	577-B External Diseases of the Eye (for Specialists)	February 26-March 2, part time	75.00
	578-B Ocular Expressions of Systemic Disease	February 26-March 2, part time	75.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Sanitarium and Hosp. for Chronic Diseases	External Eye Diseases	April, 8 sessions, 8 weeks	20.00
	Ophthalmoscopy	April, 8 sessions, 8 weeks	20.00
University of Oregon Medical School, 3181 S.W. Sam Jackson Park Rd., Portland 1, Ore.	Postgraduate Course in Ophthalmology and Otolaryngology	March 25-30, 2½ days for Ophth. 2½ days for Oto.	50.00 for one 75.00 for both
Gill Memorial EENT Hospital, 711 S. Jefferson St., Roanoke, Va.	24th Annual Spring Graduate Course in Ophthalmology-Otology, Rhinology-Laryngology, Facio-Maxillary Surgery, Bronchoscopy-Esophagoscopy	April 2-7, full time	75.00
ORTHOPEDIC SURGERY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Minor Orthopedic Surgery	April 12-May 31, 8 sessions	80.00
	Diseases and Injuries of Bones and Joints	July 9-30, full time	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Children's Hospital	Orthopedic Surgery 1	Throughout the year, 1-12 months, full time	800.00 [1] for 12 months
At: Massachusetts General Hospital	Orthopedic Surgery 2	Throughout the year, 3-12 months, full time	800.00 [1] for 12 months
At: Massachusetts General and Children's Hospital	Orthopedic Surgery 3	Throughout the year, 1-3 months, full time	200.00 [1] for 3 months
Columbia University, 630 W. 168th St., New York At: Hospital for Joint Diseases	Orthopedic Surgery PM 80 Survey of the Essentials of Orthopedics	March 1-May 10, part time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Orthopedics in General Practice	April and May, 6 weeks, 6 sessions	60.00
	Orthopedics of the Foot	Arranged, 2 months, 8 sessions	100.00
	Orthopedic Surgery for General Surgeons	Arranged, 3 months, part time	75.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Operative Orthopedics (cadaver)	Arranged, 5 sessions, part time	100.00
	Advanced Orthopedics of the Foot	Arranged, 8 sessions, part time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	583-B Functional Anatomy in Relation to Orthopedic Surgery	January 15-26, part time	75.00
	581-A Seminar in Orthopedic Surgery (for Specialists)	January 29-February 9, full time	125.00
	582-B Orthopedics in General Practice	May 14-19, full time	60.00
PATHOLOGY			
University of California, University Extension, Los Angeles 24, Calif.	Surgical Pathology	March 3-April 21, 8 sessions, part time	75.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in Pathology and Laboratory Medicine	April 4, 10 sessions, 10 weeks	100.00
	12 month Department Course in Gross and Surgical Pathology	By appointment, full time	900.00
	12 month Course in Gross and Microscopic Pathology	By appointment, full time	500.00
	6 Month Clinical Course in Gross and Microscopic Pathology	By appointment, full time	500.00
	Personal Course in Surgical Pathology on Selective Subjects	By appointment, 1 or 2 weeks, full time	15.00 per hr.
	Personal Course in Surgical Pathology	By appointment every month, 2 or 4 weeks, full time	150.00 2 weeks 250.00 4 weeks

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Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PATHOLOGY—Continued		
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1, Md.	Pathology (Neurological)	Arranged, 6 months, full time	$300.00 [12]
	Pathology "B"	Arranged, 6 months, full time	150.00
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Free Hospital for Women	Pathology of Obstetrics and Gynecology	January 4-May 24, 21 sessions, part time	150.00 [1]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Gynecologic Pathology	March 12-June 9, 12 weeks, part time	60.00
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Pathology PM 31 Surgical Pathology	January 13-April 21, part time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Pathology	Arranged, 16 weeks, part time	200.00
	Clinical Pathology	Arranged, 26 hours	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Surgical Pathology	Arranged, 3 months, part time	300.00
	Urological Pathology	Arranged, 3 months, part time	50.00
	Blood Transfusions	Arranged, 2 weeks, part time	100.00
	Pathology	Arranged, 3 months, part time	300.00
	Pathology	Arranged, 12 months, part time	1,000.00
	Pathology for Surgeons	Arranged, 1 month, part time	150.00
New York University Post Graduate Medical School, 477 First Ave., New York At: University Hospital	441-B Gynecological Pathology for Specialists	January 23-March 15, part time, 16 sessions	100.00
	442-B Surgical Pathology for Specialists	March 29-June 28, 30 sessions, part time	200.00
At: Bellevue and University Hospitals	444-A Pathology in Relation to Orthopedic Surgery	February 7-April 25, 12 sessions, part time	90.00
At: Lenox Hill Hospital	686-B Pathology for Surgeons	April 2-May 10, 12 sessions, part time	50.00
	687-B Histopathology for Gynecologists	April 3-May 11, 12 sessions, part time	50.00
Baylor University College of Medicine, 1200 M. D. Anderson Blvd., Houston, Texas	Ophthalmic Pathology	February and March, 16 sessions, part time	10.00
	Ophthalmic Pathology	January-June, 24 sessions, part time	10.00
	Gyn. and Ob. Pathology	March 1-May 10, 10 weeks, 20 sessions	10.00
University of Texas Postgraduate School of Medicine, 207 A Hermann Professional Bldg., Houston, Texas At: M. D. Anderson Hospital	Clinical Pathology for the Physician in General Practice	March 29-April 19, 4 sessions	10.00
University of Washington School of Medicine, Seattle 5, Wash.	Pathology of Surgical Diseases	March 19-23, full time	50.00
	PEDIATRICS		
University of California Medical Center, San Francisco 22, Calif.	Pediatrics	June 18-22, full time	Not given
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver	Institute on Newborn and Premature Infant Care	February 5-9	10.00 registration fee
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	2 week intensive course in Pediatrics	April 2, full time	100.00
	2 week intensive course in Cerebral Palsy	July 30, full time	150.00
	12 month department course in Pediatrics	July 1, full time	750.00
	2 week intensive course in diagnosis and treatment of congenital and acquired heart disease in infants and children	June 4, full time	150.00
	Informal refresher course in Clinical Pediatrics	Every week, 2 or 4 weeks, full time	60.00 2 weeks 100.00 4 weeks 80.00
	Personal course in Pediatrics	March 31, 10 weeks, part time	100.00
Michael Reese Hospital Postgraduate School, 29th St. and Ellis Ave., Chicago 16, Ill.	Recent Advances in Pediatrics	May 14-26, full time	100.00
Tulane University of Louisiana School of Medicine, 1430 Tulane Ave., New Orleans, La.	Pediatrics (for Specialists)	February 12-17, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Children's Hospital	Pediatrics 2	January 2-April 28, full time	500.00 [1]
At: Massachusetts General Hospital	Pediatrics 3	June 11-23, full time	125.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Pediatrics for General Physicians	March 1-3, full time	20.00
	Pediatrics for Specialists	April 16-18, full time	20.00
Columbia University, 630 W. 168th St., New York At: Mt. Sinai Hospital	Pediatrics PM 30 Clinical Pediatrics	February 6-April 17, part time	80.00
New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.	Clinical Pediatrics	Continuously, 1-3-6-9-12 months, full time	150.00 [19]
	Pediatric Allergy	1st 2 weeks in May, full time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Pediatrics	Arranged, 4 weeks, part time	75.00
New York State Department of Health, Albany 1, N. Y. At: University of Buffalo [20]	Refresher Courses in Pediatrics	May 14-26, 2 weeks	Not given
		June 4-16, 2 weeks	Not given
New York University Post Graduate Medical School, 477 First Ave., New York At: University Hospital	612-C Clinical Pediatrics	April 9-May 5, 4 weeks, full time	150.00
	613-B Practical Clinical Pediatrics	Feb. 5-March 3, May 7-June 2, full time	125.00
	614-B Review of Clinical Pediatrics	March 12-17, May 14-19, full time	60.00
	616-A Pediatric Allergy	Feb. 13-April 17, 10 sessions, part time	60.00
At: Lenox Hill Hospital	619-A Pediatrics Cardiology	April 14-June 13, 10 sessions, part time	60.00
	688-B Pediatrics	April 3-May 25, 16 sessions, part time	50.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Beth El Hospital	Clinical Pediatrics	April, 5 weeks, 10 sessions	20.00
Baylor University College of Medicine, 1200 M. D. Anderson Blvd., Houston, Tex.	Postgraduate Course in Pediatrics	April 9-14, 1 week	None
	Postgraduate Course in Pediatric Mental Health	January 15-20, 1 week	None

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PHYSICAL MEDICINE		
University of Kansas Medical Center, Kansas City 3, Kans.	Physical Medicine and Rehabilitation	February 19-21, full time	$30.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Physical Medicine	Arranged, 4 weeks, part time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York			
At: Bellevue, University Hospitals and Institute of Physical Medicine and Rehabilitation	621-B Physical Medicine and Rehabilitation	January 15-October 13, full time	600.00
	622-A Physical Medicine and Rehabilitation	January 15 and April 16, 12 or 24 weeks, full time	250.00 12 weeks 400.00 24 weeks
	623-B Physical Medicine and Rehabilitation	January 15-February 24, 6 weeks, full time	100.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14]			
At: Kings County Hospital	Physical Medicine and Rehabilitation	April, 6 weeks, 12 sessions	20.00
	PHYSIOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Clinical Physiology, A Basic Course	March 13, 10 sessions, 10 weeks	100.00
Columbia University, 630 W. 168th St., New York			
At: Mt. Sinai Hospital	Physiology of Water and Electrolyte Balance	January 31-April 6, part time	40.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York, N. Y.	Applied Physiology	Arranged, 26 hours, part time	300.00
	Physiology of the Cardiovascular System and Blood	Arranged, 1 month, part time	75.00
	Physiology of Respiration	Arranged, 1 month, part time	75.00
	Physiology of the Nervous System	Arranged, 2 weeks, part time	50.00
	Physiology of the Special Senses	Arranged, 1 month, part time	75.00
	Physiology of the Endocrine System	Arranged, 1 month, part time	75.00
	Physiology and Chemistry of the Gastrointenstinal Tract, Digestion	Arranged, 1 month, part time	150.00
New York University Post Graduate Medical School, 477 First Ave., New York			
At: University Hospital	5420-B Normal and Pathological Physiology Functional and Chemical Aspects	March 19-30, full time	115.00
University of Pittsburgh School of Medicine, Pittsburgh 13, Pa.	Pathological Physiology for Clinicians	Throughout academic year, 32 sessions	50.00
	PHYSIOLOGICAL CHEMISTRY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Physiological Chemistry Seminar	Every quarter, 12 weeks, part time	15.00
	PLASTIC SURGERY		
American Otorhinologic Society for the Advancement for Plastic Surgery, Inc., New York			
At: Manhattan General Hospital	Rhinoplasty and Otoplasty (for Specialists)	February 12-March 17, full time	$00.00
	POLIOMYELITIS		
The National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.			
At: Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, Calif.	Poliomyelitis Teamwork in Total Care	February and June, 4 days, full time	15.00
At: University of Colorado Medical Center, 4200 E. Ninth Ave., Denver	Poliomyelitis Postgraduate Course for Physicians	Third week in May, 3-5 days, full time	20.00 [1]
At: Children's Hospital, 300 Longwood Ave., Boston, Mass.	Treatment of Acute Poliomyelitis	Middle of June and middle of August, 5 days, full time	50.00
At: D. T. Watson School of Physiatrics, Leetsdale 16, Pa.	Essentials in Care of Acute Poliomyelitis	Summer—minimum of 5 days	10.00
At: Georgia Warm Springs Foundation, Warm Springs, Ga.	Care of Acute and Convalescent Poliomyelitis	First Monday of Jan., April, July	No fee
	PROCTOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Proctology	Jan. 4-March 8, 10 sessions, part time	80.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Lecture and Cadaver Course in Proctology	Jan. 5, Feb. 16 and April 20, 5 weeks, part time	75.00
Tufts College Medical School, Postgraduate Division, 80 Bennet St., Boston 11, Mass.	Proctology I	April 23-27, full time	40.00 [1]
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Proctology II	April 30-May 25, full time	250.00 [1]
	Proctology for General Physicians	April 16-21, full time	35.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Proctology Gastroenterology Operative Proctology (cadaver)	January and April, 6 weeks, part time	200.00
	Clinical Proctology and Gastroenterology	January and April, 6 weeks, part time	100.00
	Clinical Proctology	Arranged, 6 weeks, part time	75.00
	Clinical and Cadaver Proctology	Arranged, 6 weeks, part time	175.00
	Clinical Gastroenterology	Arranged, 6 weeks, part time	75.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14]			
At: Jewish Hospital of Brooklyn	Proctology	April, 6 weeks, 12 sessions	40.00
	PUBLIC HEALTH		
U. S. Public Health Service, Atlanta, Ga.	Laboratory Diagnosis of Syphilis	February 12-23, March 12-23, April 16-27, June 4-15, full time	None
	Laboratory Diagnosis of Bacterial Diseases, Part I General Bacteriology	February 26-March 9, full time	None
	Part II General Bacteriology	March 12-23, full time	None

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PUBLIC HEALTH—Continued		
U. S. Public Health Service, Atlanta, Ga.	Laboratory Diagnosis of Parasitic Diseases, Part 1 Intestinal Parasites	March 5-23, full time	None
	Part II Blood Parasites	March 26-April 13, full time	None
	Laboratory Diagnosis of Enteric Diseases, Part 1 Introductory Enteric Bacteriology	March 26-30, full time	None
	Part 2 Advanced Enteric Bacteriology	April 2-13, full time	None
	Laboratory Diagnosis of Mycotic Diseases, Part 1 Cutaneous and Subcutaneous Fungi	April 16-27, full time	None
	Part 2 Systemic Fungi	April 30-May 11, full time	None
	Laboratory Diagnosis of Tuberculosis	April 16-27, April 30-May 11, full time	None
	Laboratory Diagnosis of Virus Diseases	April 16-May 11, full time	None
	Laboratory Diagnosis of Venereal Diseases	May 7-11, full time	None
	Laboratory Diagnosis of Mycotic Diseases	May 14-18, full time	None
	Laboratory Diagnosis of Tuberculosis	May 14-18, full time	None
	Treponema Pallidum Immobilization	May 14-18, full time	None
	Laboratory Diagnosis of Rabies	May 14-18, full time	None
	Clinical Chemistry, Part 1 Introductory and General Procedures	May 14-18, full time	None
	Part 2 Quantitative Analysis	May 21-June 1, full time	None
	Laboratory Diagnosis of Parasitic Diseases	May 21-25, full time	None
	Laboratory Diagnosis of Bacterial Diseases	May 21-25, full time	None
	Laboratory Diagnosis of Virus Diseases	May 21-25, full time	None
University of Kansas Medical Center, Kansas City 3, Kans.	Public Health and Preventive Medicine	February 12-14, 3 days, full time	None
Tulane University of Louisiana, School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Public Health Seminar	January 22-27, full time	$50.00
New York State Department of Health, 76 State St., Albany 1, N. Y.			
At: Various locations in N. Y. State	Laboratory Physician-in-Training	Any time during year, 12 months	No fee
	Residency in Public Health Practice	Continuously, 6 to 24 months	No fee
	PULMONARY DISEASE		
American College of Chest Physicians, 300 N. Dearborn St., Chicago 10, Ill.			
At: University of California, San Francisco, Calif.	Recent Advances in Diseases of the Chest	February 13-17, full time	50.00
At: Hotel Warwick, Philadelphia, Pa.	Recent Advances in Diseases of the Chest	April, 5 days, full time	50.00
At: Vanderbilt University, Nashville, Tenn.	Recent Advances in Diseases of the Chest	January 22-26, full time	50.00
At: Milwaukee Children's Hospital, Milwaukee, Wis.[17]	PG Course in Diseases of the Chest for the General Practitioner	April—4 consecutive Wednesday afternoons	25.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Personal Course in the Technic of Physical Examination and Diagnosis of the Chest	April 18, 8 sessions, 8 weeks	60.00
Mississippi State Sanatorium, Sanatorium, Miss.	Diseases of the Chest, Internal Medicine	1 week to 6 months, continuously	None
American Trudeau Society, 1790 Broadway, New York 19, N. Y.			
At: Marquette University School of Medicine, Milwaukee, Wis.	Pulmonary Diseases (for internists)	March 26-31, full time	50.00
Trudeau School of Tuberculosis, 7 Church St., Saranac Lake, N. Y.	Trudeau School of Tuberculosis	May, 4 weeks	100.00
Columbia University, 630 W. 168th St., New York			
At: Bellevue Hospital	Medicine PM 80 Diseases of the Chest	February 1-March 2, full time	75.00
At: Montefiore Hospital	Medicine PM 71 Diseases of the Chest	January 5-May 18, part time	100.00
At: Mt. Sinai Hospital	Medicine PM 37 Diseases of the Chest	January 23-March 20, part time	60.00
At: Columbia Presbyterian Hospital	Medicine PM 1 Physiologic Therapy in Pulmonary Tuberculosis and Chronic Non-Tuberculosis Pulmonary Disease	January 22-27, full time	40.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Pulmonary Tuberculosis	June, 3 weeks, full time	175.00 [18]
	Diseases of the Chest	March and April, 2 months, part time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York	5416-A Acute and Chronic Pulmonary Disease	February 26-March 2, full time	55.00
At: Bellevue and University Hospitals			
	RADIOLOGY		
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	12 month Course in Diagnostic Roentgenology and X-ray Therapy	By appointment, full time	750.00
	8 month Course in Diagnostic Roentgenology	By appointment, full time	500.00
	High and Low Voltage X-ray Therapy	1st of every week, one or more weeks, full time	60.00 [18] 1 week
	Routine Clinical Course in Diagnostic Roentgenology and Fluoroscopy	3rd Monday of every month, 2 weeks, full time	70.00
	2 week Clinical and Didactic Course in Diagnostic Roentgenology and Fluoroscopy	1st Monday of each month, full time	125.00
	Clinical Interpretation of X-ray Findings	March 15, 10 weeks, 10 sessions	60.00
University of Kansas Medical Center, Kansas City 3, Kans.	Diagnostic X-ray and Fluoroscopy	March 22-April 26, part time, 6 sessions	25.00
	Roentgenological Physics	February and March, 8 sessions, part time	25.00
	Radiology	January 8-10, 3 days, full time	20.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	RADIOLOGY—Continued		
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Peter Bent Brigham Hospital	General Radiology 1	Monthly, throughout the year, 1 month, full time	$150.00 [1]
At: Massachusetts General Hospital	General Radiology 2	Monthly, throughout the year, 1 month, full time	150.00 [1]
At: Boston City Hospital	General Radiology 3	Monthly, throughout the year, 1 month, full time	150.00 [1]
At: Children's Hospital	Pediatric Radiology	Monthly, throughout the year, 1 month, full time	150.00
Tufts College Medical School, 30 Bennet St., Boston 11, Mass.	Radiology	March 6-9, full time	35.00 [1]
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Diagnostic Roentgenology	April 16-20, 5 days, full time	30.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Medical X-ray Conference	Quarterly, January and April, 12 weeks, part time	15.00
Columbia University, 630 W. 168th St., New York At: Columbia Presbyterian Medical Center	Radiology PM 1 Radiological Physics	January 15-April 6, part time	25.00
At: Hospital for Joint Diseases	Radiology PM 80 Roentgenographic Interpretation of the Diseases of the Bones and Joints	March 7-May 23, part time	150.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Diagnostic Roentgenology	Arranged, 6 weeks, part time	150.00
	Radium and Roentgen Therapy	Arranged, 6 weeks, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York	Roentgen Interpretation and Technic	January and April, full time, 3 months	300.00
	Advanced Diagnosis, Roentgenology and Radiotherapy	January and April, full time, 3 months	300.00
	Diagnostic Roentgenology and Radiation Therapy	January and April, full time, 12 months	1,000.00
	Practical Course in Superficial and Deep X-ray Therapy	Arranged, 4 weeks, part time	100.00
	Advanced Course in Radiotherapy	Arranged, 4 weeks, part time	100.00
New York University Post Graduate Medical School, 477 First Ave., New York At: University Hospital	652-B Diagnostic Radiology	February 19-May 11, part time	100.00
	654-A Radiobiology	February 1-June 21, part time	125.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Hospital	Cardiovascular Roentgenology	April, 8 sessions, part time	20.00
At: Jewish Sanitarium and Hosp. for Chronic Diseases	Clinical Radiology	April, 10 sessions, 10 weeks	20.00
At: Beth El Hospital	Roentgen Diagnosis in Gastroenterology	April, 8 sessions, 8 weeks	20.00
	SURGERY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Thoracic Surgery	May 2-June 20, 8 weeks, part time	30.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12, Ill.	Intensive 2 weeks Course in Surgical Technic	Jan. 22, Feb. 5 and 19, March 5 and 19, April 2, 16 and 30, May 14, June 4 and 18, July 9, full time	200.00
	4 week Course in Surgical Technic, Clinical Surgery, Surgical Anatomy, Pre- and Postoperative Management	February 5, March 5, April 2 and 30, June 4 and July 9, full time	300.00
	2 week Personal Course in General Surgery	April 16, full time	250.00
	1 week Personal Course in Surgery of Colon and Rectum	March 5, April 9, May 14, June 4, full time	100.00
	2 week Course in Surgical Anatomy on the Cadaver, Clinical Surgery, Pre- and Postoperative Management	February 19, March 19, April 16, May 14 and June 18, full time	150.00
	1 week Personal Course in Breast and Thyroid Surgery	June 25, full time	150.00
	10 hour Personal Course in Gallbladder Surgery	April 23 and June 18, full time, 3 days	100.00
	2 week Intensive Review Course Considering Basic Principles in General Surgery	April 2, full time	200.00
	Personal Course in Surgical Pathology, Gross and Microscopic	March 14, 10 weeks, 10 sessions	100.00
	Surgical Anatomy on the Cadaver	March 15, 10 weeks, 10 sessions	125.00
	Personal Course in Clinical Surgery	March 8, 10 weeks, 10 sessions	150.00
	Surgical Technic with Practice	February 14, 10 weeks, 10 sessions	200.00
	Personal Course in Surgical Diagnosis, Pre- and Postoperative Management	April 4, 10 weeks, 10 sessions	100.00
	Lecture Course in Basic Principles Concerned in General Surgery	March 23, 10 weeks, 10 sessions	100.00
	Practical and Didactic Course in Proctoscopy and Sigmoidoscopy	Jan. 16, Feb. 6, March 13, April 17, May 22, June 19, July 10, part time, 3 weeks	50.00
	10 hour Course in the Treatment of Varicose Veins	Every Monday, 2 days, full time	40.00
	10 hour Course in the Treatment of Varicose Veins	1st and 3rd Wednesday, each month, part time	40.00
	Personal Course in Esophageal Surgery	April 3, 10 weeks, 10 sessions	150.00
	1 week Personal Course in Esophageal Surgery	June 4, full time	150.00
	Personal Course in Thoracic Surgery	April 4, 10 weeks, 10 sessions	100.00
	1 week Personal Course in Thoracic Surgery	June 11, full time	100.00
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16, Ill.	Recent Advances in Surgery	April 23-28, full time	50.00
University of Kansas Medical Center, Kansas City 3, Kans.	Surgery including Urology, Orthopedics and Industrial Surgery	January 29-February 2, full time	30.00

References will be found on page 1301.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1951 to July 15, 1951—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston, Mass. At: Massachusetts General Hospital	Experimental and Clinical Surgery	Arranged, 6-12 months, full time	$800.00 [1] for 12 months
Tufts College Medical School, 30 Bennet St., Boston 11, Mass.	Principles of Surgical Technique	May 21-June 29, 6 weeks, part time	250.00 [1]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Surgery Seminar	January and April, 12 weeks, part time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Surgery for General Physicians	May 17-19, 3 days, full time	20.00
Essex County Medical Society, Newark, N. J. At: Newark City Hospital	Surgery of the Autonomic Nervous System	February 16, 8 sessions, part time	100.00
Columbia University, 630 W. 168th St., New York At: Several Affiliated Hospitals	Surgery PM 100 Recent Developments in Surgery	May 14-18, full time	50.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York, N. Y.	Thoracic Surgery	Arranged, 3 weeks, full time	225.00
	Surgical Technique	Arranged—50 hours	375.00
	Combined Surgical Course	January and April, 3 months, full time	350.00
New York Polyclinic Medical School and Hospitals, 345 W. 50th St., New York 19	Clinical Surgery	January and April, 6 weeks, full time	100.00
	Clinical and Operative (Cadaver) Surgery	January and April, 6 weeks, full time	200.00
	Traumatic Surgery Including General Surgery, Orthopedic Surgery and Physical Medicine	Arranged, 2 months, part time	200.00
New York University Post Graduate Medical School, 477 First Ave., New York At: Bellevue and University Hospitals	661-B Review of General Surgery for Specialists	April 2-28, 4 weeks, full time	300.00
	662-A The Basic Problems in Cancer Therapy for Specialists	January 22-February 3, full time	200.00
	6813-A Surgery of the Hand	March 26-31, 6 days, full time	100.00
	6814-A Seminar in Traumatic Surgery	February 5-17, full time	150.00
	6815-A Surgery of Trauma	April 5-June 7, part time, 10 sessions	100.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: St. John's Episcopal Hospital	Office Surgery	April, 8 sessions, part time	20.00
Cleveland Clinic and Bunts Educational Institute, Euclid Ave. at E. 93rd St., Cleveland, Ohio At: Cleveland Clinic	Elective Surgery of the Gastrointestinal Tract	Spring, 2½ days	15.00
University of Oregon Medical School, 3181 S.W. Sam Jackson Park Rd., Portland 1	General Surgery	March 12-16, full time	50.00
	THERAPY		
University of Michigan Medical School, Dept. of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Recent Advances in Therapeutics	May 3-5, 3 days, full time	15.00
Joint Committee on Postgraduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[14] At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Therapeutics	April, 7½ weeks, part time	40.00
	UROLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	General Urology	January 3-February 28, 9 weeks 9 sessions	35.00
University of California, University Extension, San Francisco 22, Calif. At: Franklin Hospital	Urology	March 26-29, full time	Not given
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago, Ill.	2 week intensive course in Urology	April 16, full time	225.00
State University of Iowa College of Medicine, Iowa City, Iowa	Urology for the General Practitioner	April, 1 day	5.00
New York University Post Graduate Medical School, 477 First Ave., New York At: Bellevue, University and Affiliated Hospitals	671-A Advanced Course in Urology (for Specialists)	February 5-March 31, full time	350.00
American Urological Association, South Central Section, 4105 Live Oak St., Dallas, Tex. At: Palm Garden, Adolphus Hotel, Dallas, Tex.	Postgraduate Urological Seminar [13]	January 29-February 2, full time	50.00
	VENEREAL DISEASES		
U. S. Public Health Service, Hot Springs National Park, Ark.	Venereal Disease PG Course	April 16-20, full time	None
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich. At: Social Hygiene Clinic, Detroit	Conference on Venereal Disease	Quarterly, 12 weeks, part time	15.00
University of Pennsylvania, Institute for the Study of Venereal Disease, Hygiene Bldg., Philadelphia 4	6 months Essential Basic Training Course	Arranged, 6 months, full time	Arranged
	4 weeks Intensive Review Course	Arranged, 4 weeks, full time	Arranged
	3 weeks Venereal Disease Review Course	Arranged, 3 weeks, full time	Arranged
	10 day Refresher Course in Venereal Disease Control	Arranged, 10 days, full time	Arranged

1. $5.00 Registration fee.
2. Stated 2 week period may be followed by additional studies at $100 per week. Course may also be taken by Philadelphia area physicians on 6 consecutive Thursdays, 36 hours at $150.00.
3. Tentative
4. $12 per week for short periods.
5. $60.00 for 5 days.
6. For 12 weeks. $175—8 weeks; $100—4 weeks.
7. Advanced candidates-in-training only.
8. Applications for 1951 class accepted now until March.
9. 3 months $100.
10. 3 months $150.
11. 3 months $250.
12. Plus $10 laboratory fee.
13. Of especial value to candidates for American Board of Urology.
14. Medical Society of the County of Kings, State University Medical Center at New York, College of Medicine.
15. 2 weeks $110; 1 month $200; 2 months $300.
16. Sponsored by University of Pittsburgh also.
17. Sponsored by Milwaukee chapter American Academy of General Practice also.
18. No charge for room and board.
19. For 1 month; $250 for 3 months; $450 for 6 months; $650 for 9 months; $850 for 12 months.
20. Restricted to physicians licensed to practice in N. Y. State.

CURRENT MEDICAL LITERATURE

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1939 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

220:237-356 (Sept.) 1950

Effect of Potassium and Electrocardiogram in Normal Dog and in Dogs with Myocardial Infarction. S. Bellet, P. C. Gazes and W. A. Steiger.—p. 237.
Effect of Different Grades of Myocardial Infarction on Tolerance of Potassium: Experimental Study in Dogs. S. Bellet, W. A. Steiger and P. C. Gazes.—p. 247.
Bernheim's Syndrome Considered in Light of Fatal Case. E. B. Wilson and S. L. Zimmerman.—p. 257.
Sudden and Unexpected Natural Death: III. Spontaneous Subarachnoid Hemorrhage. M. Helpern and S. M. Babson.—p. 262.
*Sickle Cell Anemia in White Race: Study of Family with Review of Genetic Theories. R. A. Guyton, R. W. Heinle.—p. 272.
Subacute Erythremic Myelosis: Report of Case in Filipino. V. de la Fuente.—p. 276.
*Leukemia in Radiologists in 20 Year Period. H. C. March.—p. 282.
Adrenal Cortical Function in Essential Hypertension: Study of Sweat Sodium Concentration. S. Eisenberg, R. Buie Jr. and L. Tobian Jr. —p. 287.
Experience with Protein Bound Iodine (PBI): Effect of ACTH and Cortisone on Thyroid Function. J. D. Hardy, C. Riegel and E. P. Erisman.—p. 290.
Miliary Tuberculosis of Liver: Liver Biopsy as an Adjunct to Diagnosis. M. M. Mansuy and W. J. Seiferth.—p. 293.
Polarographic Studies of Proteins and Their Degradation Products: III. Polarographically Determined Protein Index in Arthritic and Other Diseases. O. H. Müller and J. S. Davis Jr.—p. 298.
Response to Metacholine in Rheumatoid Arthritis. G. A. Perera and C. M. Plotz.—p. 307.
Absence of Intrinsic Factor from Intestinal Juice of Patients Following Total Gastrectomy. M. Paulson, C. L. Conley and E. S. Gladsden. —p. 310.
Periarteritis Nodosa Simulating Eosinophilic Leukemia. Case Report. C. Blackburn.—p. 313.
Tissue Culture Techniques in Study of Animal Viruses. F. C. Robbins and J. F. Enders.—p. 316.
Epidemic Diarrhea of Newborn. J. E. Gordon and A. D. Rubinstein. —p. 339.

Sickle Cell Anemia in the White Race.—Guyton and Heinle report sickle cell anemia in a white Sicilian girl. The sickling trait was present in five of nine available members of her family. Several theories of the genetics of sickle cell anemia had been advanced, but none of these previously widely accepted theories fully explained the genetics in all reported cases. It is certain from individual and family study in reported cases that transmission as a simple mendelian dominant is an impossible explanation in many instances. The homozygous-heterozygous theory suggests that there is a gene in Negro populations which when heterozygous results in sicklemia and when homozygous results in sickle cell anemia, a situation analogous to that which exists in familial erythroblastic (Cooley's) anemia. This theory is probably correct, but failure of one or both parents of a sickle cell anemia patient to show sickling may be the result of incomplete penetrance of the trait-producing gene.

Leukemia in Radiologists.—According to March, the incidence of leukemia in United States physicians who are not radiologists for the five year period 1944-1948, inclusive, is 113 in 15,637 (0.72 per cent). The incidence of leukemia in radiologists during the same period is 6 in 124 (4.84 per cent). These percentages approximate those reported for the preceding 15 year period, 0.44 and 4.57 per cent, respectively. The combined figures for physicians for the two decades 1929 to 1948, inclusive, are as follows: 65,922 nonradiologists died, 334 of whom died of leukemia. During this same 20 year period, 299 radiologists died, 14 of whom had leukemia. The over-all incidence for nonradiologists is 0.51 per cent and for radiologists 4.68 per cent. It is thus seen that the incidence of leukemia in radiologists is more than nine times as great as in nonradiologists. This difference has statistical significance. It is suggested that the increased incidence of leukemia in physicians as a whole (compared with the adult male white population) might be due to the same factor of exposure to ionizing radiation.

American Journal of Pathology, Ann Arbor, Mich.

26:755-964 (Sept.) 1950

Developmental Stenosis of Aqueduct of Sylvius. R. S. Beckett, M. G. Netsky and H. M. Zimmerman.—p. 755.
Necrotizing Pulmonary Arteritis Occurring with Congenital Heart Disease (Eisenmenger Complex): Report of Case with Necropsy. J. W. Old and W. O. Russell.—p. 789.
Histogenesis of Papillary Cystadenoma Lymphomatosum (Warthin's Tumor) of Parotid Salivary Gland. A. S. Thompson and H. C. Bryant Jr.—p. 807.
Bilateral Mammary Arteritis: Report of Case. T. R. Waugh.—p. 851.
*Histologic Study of Muscles and Nerves in Poliomyelitis. J. Denst and K. T. Neubuerger.—p. 863.
Transfusional Siderosis. J. P. Wyatt, H. K. Mighton and V. Moragues. —p. 883.
Renal Siderosis in Hemoglobinuric Nephropathy. W. M. O'Donnell. —p. 899.
Nuclear Structure in Mammary Carcinoma. M. M. Black and F. D. Speer.—p. 913.
Effect of Sodium Sulfadiazine on Renal Tubule (Nephron) of Albino Rat. J. G. Brunson and J. G. Edwards.—p. 923.
Observations on Mitotic Reaction Induced in Liver of Rats by Thiourea. M. Rachmilewitz, A. Rosin and L. Doljanski.—p. 937.
Importance of Methionine and Choline in Arrest of Dietary Cirrhosis of Liver in Rat. E. R. Jaffé, R. W. Wissler and E. P. Benditt.—p. 951.

Muscles and Nerves in Poliomyelitis.—Denst and Neuberger obtained muscles and nerves at autopsy from 12 patients with poliomyelitis. Five deaths occurred during the acute stage, from the third to seventh day after the onset of clinical symptoms. Three patients died from 16 to 60 days after the onset. Four patients who were chronically ill survived from 14 months to three years after the initial paralysis. Samples of the following muscles were taken: temporal, sternocleidomastoid, pectoralis major, deltoid, biceps brachii, intercostals, diaphragm, rectus abdominis, psoas, quadriceps femoris, adductor magnus and gastrocnemius. The nerves that were studied included the phrenic, intercostals, the three cords of the brachial plexus, femoral and sciatic. These muscles and nerves presented a characteristic histological picture independent of their location. Two additional cases of bulbar poliomyelitis, with a duration of two and seven days, respectively, were examined. The muscular changes consisted of early fatty metamorphosis, followed by varying degrees of degeneration, atrophy and late fibrosis. Plasmodial formations of sarcolemmal nuclei in connection with disintegration of muscle fibers were seen frequently. Hypertrophic fibers were found in late cases. Proof of true regeneration was lacking. The histological picture resembled as a rule, that of the neurogenic forms of muscular atrophy but occasionally was reminiscent of that of progressive muscular dystrophy. The nerves showed early stripe-like demyelination and relatively minor change in the axis cylinders. The lesions in the nerves appeared less severe and less extensive than those in the muscles. The pathological process appeared to be different from wallerian degeneration. The possibility of direct action of the virus on muscles and nerves must be considered.

American Journal of Psychiatry, New York

107:161-240 (Sept.) 1950. **Partial Index**

Why State Hospital Superintendents Fail. C. T. Perkins.—p. 170.
The Clinical Director Looks at the Hospital Superintendent. A. M. Duval.—p. 173.
Cerebral Palsy: Medical Considerations and Classifications. T. Fay. —p. 180.
Clinical Report on Use of Dimethyl Ether of *d*-Tubocurarine Iodide in Electroshock Therapy. G. A. Ulett, R. M. Counts and A. H. Chapman. —p. 184.
Institutional Program for Committed Sex Deviants. B. A. Cruvant, M. Meltzer and F. J. Tartaglino.—p. 190.
Group Therapy in Sexual Maladjustment. A. Stone and L. Levine. —p. 195.
Strategic Conditions in Psychotherapy of Persons with Schizophrenia. B. Betz.—p. 203.
Complications of Acute Catatonic Excitement: Report of 2 Cases. M. J. Aronson and S. V. Thompson.—p. 216.
Follow-Up Study of Motor Withdrawal Reaction to Heat Discomfort in Patients Before and After Frontal Lobotomy. W. P. Chapman, A. S. Rose and H. C. Solomon.—p. 221.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

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*Mediastinal Emphysema. J. A. Evans and T. R. Smalldon.—p. 375.
Encephalotrigeminal Angiomatosis (Sturge-Weber Syndrome) with Particular Reference to Roentgenological Aspects Before and After Neurosurgery. J. R. Green, J. Foster and D. L. Berens.—p. 391.
Roentgenologic Aspects of Head Trauma. R. J. Gross.—p. 399.
*Aplasia of Lung with Angiocardiographic Demonstration of Anomalous Pulmonary Circulation. M. D. Ingram Jr., G. W. Hudson and T. J. Davis.—p. 409.
Aneurysm of Pulmonary Artery: Report of Case. W. J. Clifford, W. F. MacGillivray and R. H. Goodale.—p. 414.
Report of Case of Long Standing Renal Insufficiency with Extensive Metastatic Calcifications (Renal Osteitis Fibrosa Cystica). R. T. Levin and P. D. Genovese.—p. 423.
Use of Preliminary Roentgenogram of Abdomen in Diagnosis of Congenital Obstruction of Intestine. J. H. Kneidel.—p. 430.
Summary of 49 Radiologists' Opinions on Skeletal Age Limits of Apparently Normal Six-Year-Old Children. R. W. House.—p. 442.
Response of Carcinoma of Cervix Uteri to Fractionated Radium and Roentgen Therapy Given Concurrently. H. B. Hunt.—p. 446.
Calcified Metastatic Deposits in Peritoneal Cavity, Liver and Right Lung Field from Papillary Cyst-Adenocarcinoma of Ovary. L. Nathanson. —p. 467.
Neurofibrosarcoma of Neck: Report of Case with 10 Year Survival After Roentgen Therapy. H. Marks.—p. 470.
Large Hydatid Cyst of Liver: Case Report. C. W. Perkins.—p. 473.
Calibrated Roentgen-Ray Film Badge Dosimeter. E. Tochilin, R. H. Davis and J. Clifford.—p. 475.
Dosimetry of Ionizing Particles. G. Failla and H. H. Rossi.—p. 489.

Mediastinal Emphysema.—Evans and Smalldon report the occurrence of mediastinal emphysema in 50 patients. Pulmonary interstitial emphysema followed a prolonged and difficult combined abdominoperineal resection in two patients. Mediastinal emphysema occurred as a complication during an asthmatic episode in four patients. The creation of a pressure gradient between alveolus and vessel sheath as the result of atelectasis of a portion of lung produced mediastinal emphysema in one patient. Ten cases of mediastinal emphysema occurred in patients in whom an obstruction to the airway, which necessitated tracheotomy, was the precipitating factor. Mediastinal emphysema developed after diagnostic puncture of the external jugular vein in two patients. There were six cases of mediastinal emphysema in full term newborn babies, with four deaths. Spontaneous mediastinal emphysema arose without apparent cause in three presumably healthy persons in whom no underlying pathological condition was subsequently demonstrated. The symptoms and signs of mediastinal emphysema are the result of "airblock." Pain may be mild or severe and may closely simulate coronary disease. Dyspnea and cyanosis are the result of increased mediastinal tension. Emphasis is placed on the importance of perialveolar and perivascular extension, as demonstrated by Macklin and Macklin, in evaluating dyspnea and cyanosis in cases of acute pulmonary infection, in asthmatics, in the newborn and in postoperative cases where trauma to pleura or extension of air from operative site to mediastinum seems unlikely. Early recognition of the real nature of the condition is imperative if prompt corrective measures are to be instituted. Posteroanterior roentgenograms may demonstrate one or both mediastinal pleural reflections or may reveal a globular radiolucency superimposed on the cardiac shadow. The lateral projection is the most revealing in outlining mediastinal collections of air in the majority of cases. Roentgen examination of the chest before tracheotomy is valuable for ruling out mediastinal emphysema as the cause of extreme dyspnea and cyanosis. Early roentgen diagnosis is important to prevent the development of so-called "malignant" pneumomediastinum, which may be fatal.

Aplasia of the Lung.—Ingram and co-workers report two cases of aplasia of the lung in which diagnoses were made during life in a girl aged 10 and in a male infant aged 14 months. This brings to 18 cases the total number in which diagnoses have been made during life. The observations in the authors' first patient were further corroborated by angiocardiographic demonstration of a single pulmonary artery. This is believed to be the first time that such a study has been undertaken. The second patient had congenital hemivertebra of the thoracic portion of the spine, which occurrence had been previously reported. Aplasia of the lung is usually asymptomatic. It occurs more frequently in males than in females, in a ratio of three to two. It is seen three times as often on the left side as on the right. Diagnoses in these cases are usually the result of an accidental observation during physical examination or roentgenographic study in cases of extrapulmonary disease.

American Practitioner & Digest of Treat., Philadelphia

1:785-854 (Aug.) 1950

Use of Nitrogen Mustard in Malignant Disease. W. L. Cook, W. J. Seiferth and G. J. Kastlin.—p. 785.
Use of Quinidine in Treatment of Cardiac Arrhythmias. R. France. —p. 790.
Metastatic Brain Abscess. T. D. Cohn, M. Krinsky and H. Zarowitz. —p. 792.
*The Depressed Patient: Management with the Aid of a New Medication. H. V. Grahn.—p. 795.
The Adrenal Cortex: Review of Its Normal and Pathologic Physiology. A. E. Hussar.—p. 798.
Treatment of Hodgkin's Disease. C. M. Huguley.—p. 807.
Local Medication for Relief of Perineal Pain After Delivery or Surgery. A. P. Hudgins.—p. 810.
Case of Enuresis. H. H. W. Miles and S. Cobb.—p. 812.
Method for Fetal Electrocardiography. C. W. Pfister and S. G. Plice. —p. 816.
Modern Aids to Cancer Diagnosis for the General Practitioner. I. Pilot and B. M. Chapman.—p. 820.
Psychiatric Therapy in Cardiovascular Disease. H. H. Morris and L. H. Smith.—p. 823.
Differentiation of Angina Pectoris, Chronic Coronary Insufficiency and Myocardial Infarction. J. L. Switzer.—p. 828.
Veratrum Viride in Treatment of Hypertension. H. L. Holley and I. A. Koffler.—p. 840.
Evaluation of Etiologic Factors in Dermatosis. A. Sterling.—p. 845.
Complications of Anal Fissure. T. Wilensky.—p. 849.

Management of the Depressed Patient.—Grahn points out that this is an age of unrest and that a large percentage of persons seeking medical aid are weighed down by vague depressions and anxieties. When a patient has, in addition, some actual physical illness, this uneasy, despondent attitude can seriously impede treatment and recovery. When no physical illness is present, the attitude is still a danger signal, a warning of a possibly much graver psychological upset in the future. The family physician, because of his familiarity with his patient's problems and background, has a good opportunity to help such persons. The ideal treatment would be to discover the causes of the patient's emotional turmoil and remove them, but since this is usually impossible, the author used medication. He treated 85 patients who had symptoms of depression or anxiety with a preparation combining *d*-amphetamine and amylethyl barbituric acid. This combination has a tranquilizing effect that seems to neutralize extremes of mood, giving the patient a more normal outlook and behavior. Satisfactory results were secured in almost every case in which the symptoms were within "neurotic" limits; in active psychoses, the drug had little or no effect. The preparation is best used as a temporary measure, to alleviate depression or anxiety sufficiently for the patient to make an effort toward solving his problems or facing them in some more healthy manner. Although no drug can substitute for psychiatric treatment when that is indicated, the preparation described is extremely useful in relieving the relatively mild emotional symptoms seen constantly in general medical practice.

Annals of Internal Medicine, Philadelphia

33:275-532 (Aug.) 1950

Global Strategy in Preventive Medicine. K. F. Meyer.—p. 275.
Evolution and Treatment of Late Disease of Liver. C. M. Jones.—p. 292.
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Problems Presented by Pulmonary Tuberculosis in Patients over 50. E. L. Leech.—p. 321.
Common Cold and Its Implications. W. J. Kerr.—p. 333.
Incidence of Hypertension in Puerto Rico. R. M. Suárez.—p. 346.
Effect of Dicumarol on Erythrocyte Sedimentation Rate. R. H. Wier, J. C. Eagan and S. A. Wolfson.—p. 354.
*Chronic Typhoid Carrier. III. Therapy with Antagonistic Bacillus, Antibiotics and Sulfonamides. J. A. Vaichulis, A. Littman, A. C. Ivy, G. Zubowicz and R. Kaplan.—p. 361.
Influenza A Prime: Clinical Study of Epidemic Caused by New Strain of Virus. E. D. Kilbourne and J. P. Loge.—p. 371.
*Outbreak of Syringe-Transmitted Hepatitis with Jaundice in Hospitalized Diabetic Patients. P. M. Sherwood.—p. 380.
*Effect of Streptomycin on Tuberculous Meningitis. H. D. Brainerd and H. R. Eagle.—p. 387.
Hemolytic Crisis in Hereditary Spherocytosis: Study of a Family of Five with Concurrent Crisis. J. G. Li, I. G. Voth and E. E. Osgood.—p. 411.
Hypersensitivity to Pathogenic and Non-Pathogenic Fungi. E. L. Keeney.—p. 418.
Observations from 40 Years of Medical Teaching. J. E. Paullin.—p. 431.

Treatment of Chronic Typhoid Carriers.—Vichulis and his associates report the results of therapy in which suspensions of bacteria that produce an antibiotic against Salmonella typhi were fed to 25 chronic carriers. In addition, 62 chronic carriers were treated with penicillin, carinamide, sulfonamides and tetraiodophenolphthalein or alcohol. Smaller groups were treated with glucosulfone sodium (promin®) streptomycin, aureomycin, chloramphenicol, terramycin and two new chemotherapeutic agents. Of the 25 patients treated with aqueous suspensions of a typhoid-inhibiting, gram-positive, spore-forming bacillus resembling Bacillus subtilis, 19 were cured. All the six patients tested in whom this treatment failed were biliary carriers. Synergistic therapy, consisting of massive doses of penicillin in combination with carinamide, a mixture of three sulfonamides and tetraiodophenolphthalein, was effective in eight of 42 patients. A solution of penicillin, carinamide and sulfonamides in 5 per cent ethyl alcohol solution was given intravenously in conjunction with intramuscular and oral therapy to 17 patients. Failures resulted in 10 patients receiving less than five liters intravenously. Cure resulted in three, probable cure in another three and failure in one of seven patients receiving larger amounts. Treatment with glucosulfone sodium, streptomycin, aureomycin, chloramphenicol, terramycin and two chemotherapeutic agents was not too successful. Response to therapy was not correlated with age, sex, duration of the carrier state or occurrence of previous clinical typhoid fever. Bile cultures were of great importance in determining the likelihood of success with bacillus or synergistic therapy. When bile cultures are negative, bacillus therapy is indicated; when positive, synergistic drug therapy should be used. The authors also concluded that gallbladder visualization is a favorable prognostic observation with regard to medical therapy.

Syringe-Transmitted Jaundice Hepatitis.—Sherwood reports on syringe-transmitted hepatitis with jaundice in four diabetic patients. The icterogenic agent was transmitted by the multiple dose per syringe technic of administering insulin. The incubation period ranged from a minimum of 64 days to a maximum of 106 and is compatible with that of homologous serum jaundice. The course of the acute hepatitis with jaundice in these four patients was generally uneventful. There were no complications or deaths, and the diabetes was not difficult to control. All four recovered within a period of 13 to 46 days. The author concludes that the use of a fresh, sterile syringe and needle for any injection or blood collection will reduce the dissemination of infected serum from one patient to another. Until this is possible, sterilization of equipment by dry heat (160 C.) for a minimum of one hour is essential.

Streptomycin in Tuberculous Meningitis.—Brainerd and Eagle studied the effect of streptomycin on 27 patients with tuberculous meningitis. Both intrathecal and intramuscular routes of administration were used. The daily dose of streptomycin given by the intramuscular route varied from 12.9 to 130 mg. per kilogram of body weight, and the intrathecal dose from 0.4 to 9.3 mg. per kilogram. Toxic effects from the drug were frequent, although severe intoxication was uncommon. Nine patients died during the first four weeks of treatment without evidence of improvement; eight showed initial favorable response but later relapsed and died while still receiving treatment. Two patients showed initial favorable response but had slight persistent evidence of infection after completion of the five month therapeutic period; one patient was free of all evidence of central nervous system infection following the completion of five months' treatment, but meningitis recurred 100 days later; two were completely free of all evidence of meningeal infection at the completion of five months' treatment. These patients are completely well 16 and 17 months after the end of the therapeutic period. Five patients are still under observation. The age and sex of the patients influenced the outcome. The average age of the improved patients was 8.7 years, with a range of 9 months to 42 years. The average age of the unimproved group was 31.2 years, with a range of 8 months to 58 years. Eleven of 13 females responded favorably, whereas only seven of 14 males were improved. There was no correlation between the therapeutic result and the number of cells in the cerebrospinal fluid or the concentration of cerebrospinal fluid glucose, chloride or protein. The duration of the disease before treatment had no effect on the outcome. Most patients responding favorably to treatment received more than 60 mg. per kilogram daily of streptomycin intramuscularly and over 2.0 mg. per kilogram daily intrathecally. Toxic reactions to streptomycin are common with high dosage but are a justifiable risk. The authors emphasize the importance of prolonged follow-up of treated patients and conclude that the prognosis of tuberculous meningitis is still grave.

Archives of Neurology and Psychiatry, Chicago

64:313-490 (Sept.) 1950

Role of Sympathetic and Parasympathetic Systems in Reflex Dilatation of Pupil. O. Lowenstein and I. E. Loewenfeld.—p. 313.
Mutual Role of Sympathetic and Parasympathetic in Shaping of Pupillary Reflex to Light: Pupillographic Studies. O. Lowenstein and I. E. Loewenfeld.—p. 341.
Some Data Concerning Growth and Development of Cerebral Cortex in Man: II. Postnatal Growth Changes in Cortical Surface Area. O. A. Turner.—p. 378.
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Myelomalacia Secondary to Dissecting Aneurysm of Aorta. G. A. Schwarz, W. K. Shorey and N. S. Anderson.—p. 401.
Manic Psychosis in Case of Parasagittal Meningioma. W. Oppler.—p. 417.
Pleocytosis and Meningeal Signs in Uremia: Report on Sixty-Two Cases. M. J. Madonick, K. Berke and I. Schiffer.—p. 431.
The Psychiatrist in the General Hospital. E. J. Alexander.—p. 437.
Electroencephalographic Studies of Encephalopathies: I. Report of Nonfatal Case of Arsenical "Hemorrhagic Encephalopathy" with Serial EEG Studies. E. Roseman.—p. 448.

Archives of Ophthalmology, Chicago

44:357-498 (Sept.) 1950

Comparison of Refraction of Strabismic Eyes with That of Nonstrabismic Eyes from Birth to Twenty-Fifth Year. E. V. L. Brown.—p. 357.
Additional Experiences with Tetraethyl Pyrophosphate in Treatment of Glaucoma. W. M. Grant.—p. 362.
Distance Discrimination: VII. Influence of Initial Position of Rods in Howard-Dolman Test. B. I. Wilner, F. W. Weymouth and M. J. Hirsch.—p. 365.
Studies on Ocular Lens: II. Synthesis of Glutathione in Normal and Cataractous Rabbit Lens. E. V. Kinsey and F. C. Merriam.—p. 370.
Malignant Melanoma of Uveal Tract: Report of Case with Death 30 Years After Enucleation. W. E. B. Hall.—p. 381.
Increased Accuracy in Squint Surgery: Report of New Instrument. P. Tower.—p. 395.
Experimental Investigation of Paracentesis in the Treatment of Ocular Ammonia Burns. W. M. Grant.—p. 399.
Use of Methapyrilene (Thenylpyramine) Hydrochloride in Ophthalmology. S. D. McPherson.—p. 405.
Surgical Treatment of Tumors of the Optic Nerve: Report of Case. P. C. Bucy, J. R. Russell and F. M. Whitsell.—p. 411.
Vertical Heterotopia of Macula. I. J. Cohen and H. K. Weisberg.—p. 419.
Cilium in Anterior Chamber: Report of Case. J. W. Smith.—p. 424.
The Orbit: Review of Literature. F. B. Fralick.—p. 437.

Archives of Pathology, Chicago

50:259-394 (Sept.) 1950

The Testis: I. The Normal Testis. R. C. Sniffen.—p. 259.
Id.: II. Abnormalities of Spermatogenesis; Atresia of Excretory Ducts. R. C. Sniffen, R. P. Howard and F. A. Simmons.—p. 285.
*Sclerosing Lipogranuloma. H. F. Smetana and W. Bernhard.—p. 296.
Accuracy of Sampling by Needle Biopsy in Diffuse Liver Disease. S. S. Waldstein and P. B. Szanto.—p. 326.
Localization of Myocardial Infarcts with Respect to Muscle Bundles of Heart. W. B. Wartman and J. C. Souders.—p. 329.
*Pancreatic Lesions Associated with Chronic Ulcerative Colitis. W. P. Ball, A. H. Baggenstoss and J. A. Bargen.—p. 347.
Effect of Adenine on Rats. J. O. Ely and M. H. Ross.—p. 359.
Primary Cardiovascular Amyloidosis: Its Clinical Manifestations, Pathology and Histogenesis. R. S. Jones and D. B. Frazier.—p. 366.
Effects of Vitamin E Deficiency and Cod Liver Oil on Myopathy in Mice. C. E. Tobin.—p. 385.

Sclerosing Lipogranuloma.—Smetana and Bernhard report 14 cases of subcutaneous sclerosing lipogranuloma characterized by tumorous swelling of subcutaneous fat in several locations. Nine men between the ages of 20 and 60 had lipogranulomatous lesions in the genital region. The duration from onset to operation varied from five weeks to eight years. The scrotum was involved in three instances, the penis in two, the scrotum and penis in two and the epididymis and the perineum in one case each. A history of physical trauma was recorded in three cases, and cutaneous lesions of an inflammatory nature were present in three others; there was no history of injury in the remaining three. Three men had lesions on the buttocks, one man had a lipogranuloma in the right arm and one in the orbit. The process persisted for a long time in most cases, and complete, spontaneous healing did not occur in any case, even after many years. Microscopic study of the lesions revealed definite disruption and alteration of the usual structure of the fat lobules of the subcutaneous adipose tissue. The normal fat cells were replaced by fat globules of varying size, sometimes smaller but often much larger than the original structure. Globules and masses of free fat became entrapped by the proliferating fixed tissue elements, forming connective tissue, which later matured into rather dense hyaline scar tissue. Sclerosing lipogranuloma is a reactive process that sometimes follows injury to subcutaneous fat tissue. The injury of the adipose tissue may be of varying character and probably sets off the reaction by interfering temporarily with the local blood supply and fat metabolism. Physical disruption and hemorrhage are not necessary to the development of this disease. The assumption that formation of fatty acids is essential in its genesis is probably erroneous. Spontaneous healing of lipogranuloma is extremely slow, since the only effective means of disposal of fats altered by injury are phagocytosis and transportation or the walling off and segregating of the affected from the unaffected area. Sclerosing lipogranuloma represents a specific reaction to an unspecific injury and follows a distinct course, which differs from that of the reaction following injury to other tissues. The only effective treatment known for sclerosing lipogranuloma is complete surgical removal of the involved tissues. "Traumatic" sclerosing lipogranuloma is related to, but may be distinguished from traumatic fat necrosis of the breast, relapsing nonsuppurative nodular panniculitis, adiponecrosis neonatorum, lipid pneumonia and pelvic lipogranuloma caused by iodized oils injected for uterosalpingography or other artificial lipogranulomas.

Pancreatic Lesions Associated with Colitis.—Ball and co-workers studied the pancreas in 86 consecutive cases of chronic ulcerative colitis in which necropsy was performed, and for comparison in an additional 86 cases in which necropsy was performed and chronic ulcerative colitis was not present. Interstitial pancreatitis was observed in 46 (53 per cent) of the 86 cases of active chronic ulcerative colitis. The interstitial pancreatitis was acute in two instances and chronic in 44 (severe in five, moderate in 17 and mild in 22). Only three instances of mild chronic interstitial pancreatitis were observed in the control group. In addition to the 46 case of interstitial pancreatitis, there were 11 cases in which definite pancreatic fibrosis and acinar atrophy were present. The pancreatic fibrosis probably represented the healed stage of chronic interstitial pancreatitis. Pancreatic acinar dilatation occurred in 46 cases (53 per cent). The incidence of these lesions was far in excess of those in the control group. The causative factors of these lesions could not be determined. The interstitial pancreatitis seen in the cases of colitis differed significantly from the clinicopathological entities of pancreatic necrosis and chronic relapsing pancreatitis. Fatty replacement of liver commonly accompanied pancreatic disease in the cases of colitis. There were no clinical signs of pancreatic disease in the course of ulcerative colitis, but future clinical and physiological research may elucidate the significance of these pathological observations.

Arkansas Medical Society Journal, Fort Smith

47:73-82 (Sept.) 1950

Catarrhal Otitis Media with Effusion. P. L. Mahoney and A. J. Brizzolara.—p. 73.
*Use of Physostigmine in Treatment of Black Widow Spider Bite. O. R. Holloway.—p. 75.

Neostigmine and Atropine for Bite of Black Widow Spider.—Holloway discusses two patients who stated that they had been bitten by a black widow spider. Both were treated two hours after the bite occurred, and both had symptoms indicative of such a bite. They were treated with phyatromine,® which is a combination of physostigmine salicylate and atropine sulfate. The first patient was given a deep intragluteal injection of 1.5 cc. of phyatromine® plus ¼ grain (15 mg.) of morphine sulfate. Ten minutes later he began to relax, and five minutes later he was completely relaxed. The second patient was given only 2 cc. of phyatromine.® Here again relaxation of the muscular spasm occurred in about 15 minutes. Both patients recovered completely.

Cincinnati Journal of Medicine

31:169-204 (June) 1950

Management of Acute Head Injuries. D. Echols, S. Braden, C. Pilcher and F. Mayfield.—p. 169.

Florida Medical Association Journal, Jacksonville

37:121-184 (Sept.) 1950

Cytologic Diagnosis of Malignant Disease. N. A. Murray.—p. 139.
Chronic Pyuria in Infants and Children. M. Campbell.—p. 142.
Prediabetic State and Its Clinical Importance. J. H. Barach.—p. 145.
Acute Renal Insufficiency: Review. M. E. Flipse and M. J. Flipse.—p. 149.

Journal of International College of Surgeons, Chicago

14:257-366 (Sept.) 1950

*Homografts of Aorta Preserved in Alcohol. R. Paolucci and E. Tosatti.—p. 257.
Congenital Obstructive Lesions of Urinary Tract. E. Burns.—p. 262.
*Esophagoduodenal Anastomosis in Selected Cases of Total Gastrectomy. L. T. Palumbo.—p. 267.
Pancreatic Fluid Accumulation Subsequent to Trauma: Report of Case. E. C. Wilford, C. H. Arnold, K. I. Ho and H. H. Shen.—p. 280.
Bilharziasis of Urinary Tract: Some Clinical Aspects. J. Bitschai.—p. 285.
Obstruction of Lower Portion of Urinary Tract in Infants and Children. M. F. Campbell.—p. 294.
New Endotracheal Tube: Preliminary Report. Z. Harris and J. A. Glassman.—p. 301.
Preoperative and Postoperative Nutrition for Surgical Patients with Carcinoma of Large Bowel. G. P. Giambalvo, H. D. Trimpi and H. E. Bacon.—p. 305.
Endometrioma of Sigmoid Producing Obstruction. H. E. Steadman.—p. 316.
Granuloma Cell Carcinoma of Ovary. T. M. Rogers.—p. 325.
Diaphragmatic Hernia with Eventration and Herniation of Spleen. L. S. Altman and B. Kogut.—p. 330.
Perforated Gastric and Duodenal Ulcer: Review of Cases. R. L. Schaeffer.—p. 333.

Homografts of Aorta.—Paolucci and Tosatti preserved pieces, 2 to 5 cm. in length, of abdominal aorta of dogs in pure alcohol at room temperature for five to 15 days. These segments were then transplanted into the abdominal aorta of five adult dogs between the renal and inferior mesenteric artery. The animals appeared in good condition fifteen days after the operation; they took nourishment and walked in an apparently normal manner. Roentgen examination was performed at intervals of one to nine months after the operation. There was no stenosis and no ectasia. Two dogs were killed seven and eight months after the operation. Union of the graft above and below the abdominal aorta was complete. The graft was covered by a connective tissue that made it adhere at one point to the surrounding tissues. The suture lines and the silk thread were clearly visible. There was no stenosis, thrombosis or bulging. The authors' method of preservation of homografts of aorta is simpler than that recently adopted by Gross and Peirce. Results obtained were satisfactory.

Esophagoduodenal Anastomosis.—Palumbo performed an esophagoduodenal anastomosis after a total gastrectomy in five men between the ages of 48 and 57. He prefers this anastomosis to esophagojejunostomy in certain selected cases in which the local pathological process and the proximity of a mobile duodenum are such that the cut end of the esophagus and the duodenum can be approximated without tension. The duodenum was mobilized by dissection in three of the cases of the second portion from its lateral peritoneal investment. This maneuver, with displacement of the duodenum and pancreas, did not compromise the blood supply or function of the structures. Death resulted from pulmonary edema in one patient on the sixth postoperative day. Necropsy showed definite and satisfactory healing at the site of the anastomosis. The postoperative course was complicated by a persistent draining sinus in two cases and by abscesses below and above the diaphragm in the two other cases. Barium studies showed the anastomosis to be intact and functioning without evidence of obstruction in all four cases. Esophagoduodenal anastomosis is simpler and easier to perform than esophagojejunostomy. It eliminates some of the steps required in the latter procedure, namely, closure of the duodenal stump and enteroanastomosis. Direct anastomosis of the esophagus with the duodenum appears to establish a more nearly normal anatomic and physiological continuity of the gastrointestinal tract.

Journal of Neurosurgery, Springfield, Ill.

7:383-466 (Sept.) 1950

New Absorbable Hemostatic Bone Wax: Preliminary Report. J. R. Geary and V. K. Frantz.—p. 383.
*Conservative Surgical Therapy of Brain Abscesses. L. A. Mount.—p. 385.
Precentral Motor Cortical Ablation in Experimental Epilepsy in Monkey. B. L. Pacella, M. A. Kennard, L. M. Kopeloff and others.—p. 390.
Atropine in Treatment of Closed Head Injury. A. Ward Jr.—p. 398.
Ventriculocisternostomy According to Torkildsen: Report of 22 Cases. L. Herlin.—p. 403.
Failure to Demonstrate Gliomas with Evans Blue: Precautions in Use of Intravital Dyes in Man. W. H. Sweet.—p. 412.
Paradoxical Improvement in Hemiplegia Following Cortical Excision. K. Welch and W. Penfield.—p. 414.
*Acute Degenerative Changes in Adenomas of Pituitary Body—with Special Reference to Pituitary Apoplexy. M. Brougham, A. P. Heusner and R. D. Adams.—p. 421.

Conservative Surgical Therapy in Brain Abscesses.—The conservative surgical method recommended by Mount for brain abscess consists of accurate localization of the abscess, with ventriculography if necessary. A trephine opening is made directly over the abscess; the dura is opened, and the exposed arachnoid and pia are cauterized, so as to seal the subarachnoid space and prevent meningitis. Then a needle is inserted for removal of pus for culture and smear. This is followed by insertion of a size 10 catheter with multiple openings at the end. The abscess cavity is carefully washed with penicillin until the return is clear and is then filled with penicillin. The catheter is sutured to the scalp and is brought out through the dressing in order to continue the irrigation and further instillation of the proper antibiotic as determined by the culture and smear of the pus. The abscess cavity is irrigated every six hours until the return is clear, and then penicillin is allowed to run into the cavity by gravity in order to completely fill it. Lumbar puncture is done if the antibiotic will not run in by gravity. The catheter is gradually withdrawn, 1 cm. every other day. This local treatment is combined with systemic antibiotic therapy administered either intramuscularly or orally. The author employed this method in 10 patients, two with cerebellar, one with subdural and the rest with cerebral abscesses. Recovery followed in eight patients. In 31 cases of brain abscess treated by other methods, the mortality rate was 45 per cent. The catheter method of treatment affords drainage of the abscess with a minimum of cerebral trauma, and it is therefore especially valuable when the abscess extends into important areas of the brain. If free exchange of fluid through the catheter cannot be obtained, the method is inadvisable.

Degenerative Changes in Pituitary Adenomas.—Brougham and his collaborators describe clinical and pathological observations on five patients with adenoma of the pituitary. The unique feature of these cases was a hemorrhage into the adenoma and/or extensive necrosis of the tumor, which was responsible for the sudden onset of a fairly uniform syndrome consisting of drowsiness, stupor or coma, headache and stiff neck, ocular palsies and sometimes amblyopia or hemiparesis. Some abnormality of the cerebrospinal fluid, usually the presence of blood or xanthochromia, sometimes only a slight pleocytosis or an elevated protein level, was invariably present. These acute retrogressive changes are believed to be related to the excessively rapid growth of some pituitary adenomas. The authors found only five verified cases in literature with similar symptomatology and pathological aspects but also two other cases in which the clinical aspects were highly suggestive of the same lesions. The authors stress the importance of a correct diagnosis. They list crises of adrenal insufficiency, a temporal lobe pressure cone and convulsive states as conditions that must be considered in the differential diagnosis. Although in some instances the apoplectic insult will prove swiftly fatal, supportive treatment is important in those patients who survive. One should watch for endocrinal deficiencies for which replacement therapy is possible. Some patients fail to rally, but others reach a plateau of partial improvement from which some of them may be rescued. Treatment should remain conservative as long as the clinical course is in the direction of recovery. Roentgen therapy is not advisable after pituitary apoplexy, because it might provoke additional acute degenerative changes. Few patients will have spontaneous improvement that is permanent. Extensive extravasation of blood at the infundibular region or a postinfarction swelling of the extrasellar portion of the adenoma would give rise, in most cases, either to paralytic effects on adjacent parts of the brain or to blockage of cerebrospinal fluid pathways and progressive internal hydrocephalus. Operation would then become necessary for relief of chronic headache, hemiparesis, impending stupor, papilledema or threatened optic atrophy. Surgical attack on an adenoma that has escaped from the confines of the sella is a formidable undertaking, but the results of intervention may be gratifying. Of three operations thus far reported as having been done for relief of apoplectic syndromes, two were highly successful.

Journal Pharmacology & Exper. Therap., Baltimore

100:1-118 (Sept.) 1950. **Partial Index**

Pain Relief with Hypnotic Doses of Barbiturates and Hypothesis. A. S. Keats and H. K. Beecher.—p. 1.
Pharmacologic Action of Basic Esters of p-Xenylacetic and p-Xenylglycolic Acid—New Antispasmodic Drugs. A. M. Lands, J. O. Hoppe, J. R. Lewis and E. Ananenko.—p. 19.
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Effect of Salicylate upon Pain Sensitivity. J. E. Birren, H. B. Schapiro and J. H. Miller.—p. 67.
Fate of Intrathecal Procaine and Spinal Fluid Level Required for Surgical Anesthesia. M. Helrich, E. M. Papper, B. B. Brodie and others.—p. 78.
Anticurare Action of Phenolic Quarternary Ammonium Salts. L. O. Randall.—p. 83.
Pharmacology of N,N-Dimethyl 2-Chloro-2-Phenylethylamine. F. C. Ferguson Jr. and W. C. Wescoe.—p. 100.
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Michigan State Medical Society Journal, Lansing

49:1041-1090 (Sept.) 1950

Raising Funds for Arthritis Research. H. T. Ewald.—p. 1041.
Arthritis Research in Michigan. J. J. Lightbody.—p. 1042.
Present Status of ACTH and Cortisone in Practical Management of Rheumatoid Arthritis. W. D. Robinson.—p. 1045.
Cortisone and ACTH: Their Present Relationship to Rheumatoid Arthritis. F. J. Sladen.—p. 1053.
ACTH and Colchicine for Clinical Treatment of Acute Gouty Arthritis. W. Q. Wolfson, H. D. Hunt, C. Cohn, W. D. Robinson and I. F. Duff.—p. 1058.
Study of Immediate Effects of ACTH on Histopathology of Felty's Syndrome. H. A. Freund.—p. 1065.
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17-Ketosteroid Excretion in Rheumatoid Arthritis. H. A. Freund, D. H. Basinski and R. B. Scott.—p. 1076.
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Procaine in Rheumatic Diseases. E. Lipkin.—p. 1081.
Hemagglutination Test for Rheumatoid Arthritis. H. A. Freund and C. S. Stulberg.—p. 1084.
Cortisone in Rheumatoid Arthritis. J. J. Lightbody, A. E. Price, W. S. Reveno and E. C. VonderHeide.—p. 1085.
Rupture of an Endometrial Cyst During Pregnancy. H. M. Nelson and T. S. Fandrich.—p. 1089.

New England Journal of Medicine, Boston

243:357-394 (Sept. 7) 1950

Rational Therapy for Secondary Amenorrhea. W. P. Given, R. W. Gause and R. G. Douglass.—p. 357.
Public Medical Care in Great Britain and the Scandinavian Countries: Basic Policies. F. Goldmann.—p. 362.
Massive Hematemesis Resulting from Rupture of a Gastric-Artery Aneurysm: Report of Three Cases. G. A. Donaldson and E. Hamlin. —p. 369.
"Milk Factor" in Carcinoma of Human Breast: Analysis of 88 Cases. H. W. Horne Jr.—p. 373.
Milk Factor in the Transmission of Mammary Carcinoma. J. Berner. —p. 375.

The "Milk Factor" in Carcinoma of the Breast.—The purpose of this study by Horne was to explore the possibility of the vertical transfer through breast feeding of an agent that might be a factor in the development of human mammary cancer. Case histories of well over 1,000 women with known carcinoma of the breast were made available by several hospitals. From these cases were chosen 88 patients whose mothers were still living. As a control group, a similar selection was made of 86 patients who had had vaginal plastic operations and in whom no neoplastic process had been discovered from the history, physical examination or pathological examination. The average age of the two groups was the same. Among the patients with cancer, nine (10.2 per cent) had never received any human milk. Among the patients who had had vaginal plastic operations, seven (8.1 per cent) had never received any human breast milk. Among the maternal family histories of the patients with cancer, exclusive of the patients' neoplasms, 87 tumors, of which 20 were cancers, were reported. Four of these cancers were in mothers of patients under study; one was of the breast, two of the intestines and one of the skin. Among the maternal family histories of the patients who had had vaginal plastic operations, 35 tumors, of which 14 were cancers, were reported. Only one of these cancers was in the mother of a patient under study; a cancer of the skin. The authors conclude from this that a woman may develop cancer of the breast without ever having received human breast milk. Whether the daughters of women with mammary cancer are more likely to develop the same disease if they are nursed has not been investigated and from the study here reported may not be inferred.

Plastic and Reconstructive Surgery, Baltimore

6:179-254 (Sept.) 1950

Use of Iliac Bone in Repair of Facial and Cranial Defects. R. O. Dingman.—p. 179.
Carved Cancellous Bone Grafts in Rhinoplasty. J. Gerrie, G. E. Cloutier and F. M. Woolhouse.—p. 196.
Use of Tubed Pedicle Transplant in Reconstruction of Surgical Defects in Head and Neck. D. Catlin.—p. 207.
Successful Primary Repair of Severed Parotid Duct. L. A. Bornstein and B. E. Simon.—p. 217.
Monocular Blindness as Complication of Treatment of Malar Fracture. S. Gordon and H. Macrae.—p. 228.
Skin Grafting: Technical Improvement. E. S. Lamont.—p. 233.
Sandwich Method for Immobilization of Skin Graft for Loss of Penile Skin. R. D. Rawson and S. Kirschbaum.—p. 234.
Importance of Physiognomy in Esthetic Rhinoplasty. A. Berndorfer. —p. 242.

Tubed Pedicle Transplant in Reconstructions on Head and Neck.—Catlin points out that radical surgery for cancer of the head and neck will often produce large through and through defects involving the oral cavity or pharynx. Reconstruction of such defects can be satisfactorily accomplished by the tubed pedicle transplant. The tubed pedicle is usually elevated in one stage on the anterior chest wall. The skin defect beneath the tube is closed by primary suture. Occasionally the skin of the abdomen is used to form a tube. Since the commonest complication of head and neck cancer is metastasis to cervical lymph nodes, the author is opposed to use of the skin of the neck for the elevation of a pedicle. The reconstruction must be performed in stages and usually requires several months. A small recurrence can often be controlled by further surgery before the defect has been completely closed. The tubed pedicle offers the most flexible and useful epithelial lined transplant for the closure of through-and-through defects, even in the presence of tissue damaged by previous radiation therapy. When the defect is large, two or more tubes can be employed. They may be migrated together to the defect as quickly as a single tube. Adjustments and revisions of a tubed pedicle may be made repeatedly until the desired result is obtained. The pedicle is not always as cosmetically attractive as other reconstructions, but freedom from cancer and reasonably good function must be considered of greater importance than a good cosmetic result. The author describes the surgical principles of reconstruction with the tubed pedicle in three representative cases. Photographs and drawings accompany the descriptions.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

74:659-902 (Aug.) 1950. **Partial Index**

Cortisone Acetate and Terramycin in Polyarthritis of Rats. W. C. Kuzell and E. A. Mankle.—p. 677.
Experimental Pulmonary Edema: IV. Pulmonary Edema Accompanying Trauma to Brain. E. M. MacKay.—p. 695.
Chemoprophylactic Effectiveness of Aureomycin and Terramycin in Murine Bartonellosis. M. F. Stanton, L. Laskowski and H. Pinkerton. —p. 705.
Chemotherapy of Leukemia: V. Effects of 2,4,6-Triethylenimino-S-Triazine and Related Compounds on Transplanted Mouse Leukemia. J. H. Burchenal, S. F. Johnston, M. A. Cremer and others.—p. 708.
Influence of Rice and Purified Diets upon Cardiac Behavior of Thiamine Deficient Rats. L. J. Pecora, L. L. Ashburn and J. M. Hundley. —p. 721.
Survival of Trichomonas Vaginalis in Vaginal Discharge. J. F. Kessel and C. F. Thompson.—p. 755.
Relation of Cortisone Pretreatment to Mobilization of Lipids to Liver by Pituitary Extracts. L. Levin and R. K. Farber.—p. 758.
Effect of Insulin Hypoglycemia on Eosinophiles and Lymphocytes of Psychotics. Shih Yuan Tsai, A. Bennett, L. G. May and R. L. Gregory.—p. 782.
Culture of Brown-Pearce Carcinoma in Embryonated Egg. A. M. Schechtman, M. J. Cohen and E. C. Berkowitz.—p. 784.
Use of Antipyrine in Measurement of Total Body Water in Animals. R. J. Soberman.—p. 789.
Growth Retardation of Lymphosarcoma Implants in Pyridoxine-Deficient Rats by Testosterone and Cortisone. H. C. Stoerk.—p. 793.
*Dual Antibody Response to Coxsackie and Poliomyelitis Viruses in Patients with Paralytic Poliomyelitis. J. L. Melnick and A. S. Kaplan. —p. 812.
Effect of 17-Hydroxy-11-Dehydrocorticosterone (Compound E) and of ACTH on Arthus Reaction and Antibody Formation in Rabbit. F. G. Germuth Jr. and B. Ottinger.—p. 815.
Development of Chloramphenicol-Resistant and Chloramphenicol-Dependent Variants of Strain of Klebsiella Pneumoniae. T. M. Gocke and M. Finland.—p. 824.
Hemorrhagic Skin Lesions Produced by Intradermal Meningococcus Toxin in Rabbits Following Treatment with ACTH or Cortisone. L. Thomas and W. J. Mogabgab.—p. 829.
Procarcinogenic Effect of Vitamin B12 on p-Dimethylaminoazobenzene-Fed Rats. P. L. Day, L. D. Payne and J. S. Dinning.—p. 854.
Passive Transfer of Atopic Hypersensitiveness in Man by Means of Leucocytes. M. Walzer and I. Glazer.—p. 872.
Adrenal Cortex and Lipid Metabolism: Effects of Cortisone and Adrenocorticotropin (ACTH) on Serum Lipids in Man. D. Adlersberg, L. E. Schaefer and R. Dritch.—p. 877.
*Therapeutic Effect of Aureomycin in Pernicious Anemia. H. Lichtman, V. Ginsberg and J. Watson.—p. 884.

Coxsackie and Poliomyelitis Viruses in Paralytic Poliomyelitis.—Melnick and Kaplan isolated both poliomyelitis virus and Coxsackie virus from the acute phase stools of paralytic patients during an epidemic of poliomyelitis. In two such cases, neutralizing antibody tests were made with acute and convalescent phase serum reacting with a suspension of virus obtained directly from acute phase stools. It was found that antibodies to Coxsackie and poliomyelitis viruses developed in both patients simultaneously. On the basis of the neutralization tests reported here and the finding of both viruses in the stools of 13 other patients in this epidemic, the authors believe that the failure to detect poliomyelitis virus in the stools of a paralytic patient excreting Coxsackie virus should be regarded as a technical difficulty and should not necessarily be regarded as an indication that Coxsackie virus caused the lesion resulting in paralysis. Until proved otherwise, the patient's paralytic manifestations should be considered to result from central nervous system infection with poliomyelitis virus. However, the finding of dual infections in poliomyelitis appears to occur too frequently to be regarded merely as coincidence. Is it possible that infection with poliomyelitis virus would have been a mild affair in these patients had not Coxsackie virus infection been superimposed? Consideration is being given to the possibility that Coxsackie virus infection may be one of the predisposing factors which may turn a nonparalytic into a paralytic case.

Aureomycin in Pernicious Anemia.—Lichtman and his associates gave aureomycin by mouth to four patients with Addisonian pernicious anemia in relapse and to one patient with nutritional macrocytic anemia. These patients showed a definite, although submaximal, hematological improvement. A fifth patient with Addisonian pernicious anemia was given aureomycin intravenously with no response. The mechanism of action of the aureomycin remains to be determined. Some possible explanations follow: 1. The sterilization of the gastrointestinal flora by aureomycin may remove a hemolytic toxin. 2. The lowering of the bacterial population in the gastrointestinal tract may increase the amount of dietary vitamin B_{12} available to the body (recent work has demonstrated that Escherichia coli has a decided affinity for vitamin B_{12} and can remove it from solution in vitro). 3. The lowering of the bacterial flora count by aureomycin may permit the growth of other micro-organisms, for example, yeasts, which in turn may produce pteroylglutamic acid or other hematopoietically active substances utilizable by the body.

Surgery, St. Louis

28:161-460 (Aug.) 1950. **Partial Index**

Resident Training and Specialization in Surgery. S. W. Moore.—p. 161.
*Quantitative Aspects of Hemorrhage. I. Rudman and J. D. Stewart. —p. 170.
Retardation of Wound Healing by Cortisone. E. L. Howes, C. M. Plotz, J. W. Blunt and C. Ragan.—p. 177.
*Sodium Deficiency in Surgical Patients and Failure of Urine Chloride as Guide to Parenteral Therapy. H. T. Randall, D. V. Habif and J. S. Lockwood.—p. 182.
Experimental Tuberculosis: I. Effects of Anastomosis Between Systemic and Pulmonary Arteries on Tuberculosis in Monkeys. C. R. Hanlon, H. W. Scott Jr. and B. J. Olson.—p. 209.
Cardiotomy into Empty Left Ventricle. H. D. Sirak, E. H. Ellison and R. M. Zollinger.—p. 225.
Observations on Experimental Atriovenous Anastomoses, with Particular Reference to Congenital Anomalies of Venous Return to Heart, and to Cyanosis. F. Gerbode and H. Hultgren.—p. 235.
Thoracic Aortic Coarctation: Its Experimental Production in Dogs, with Special Reference to Technical Methods Capable of Inducing Significant Intraluminal Stenosis. H. W. Clatworthy Jr., Y. Sako, T. C. Chisholm and others.—p. 245.
Functional Study of Afferent Fibers in Peripheral Sympathetic Nerves. L. W. Freeman, H. B. Shumacker Jr. and L. R. Radigan.—p. 274.
*Some Physiologic Effects of Lumbodorsal Sympathectomy for Hypertension. F. A. Simeone and O. Ramirez.—p. 282.
Venous Adaptation Following Bilateral Radical Neck Dissection with Excision of Jugular Veins. J. A. Gius and D. H. Grier.—p. 305.
Improved Method of Venography for Preoperative Evaluation of Postphlebitic Extremity. R. S. Martin and R. S. McCleery.—p. 322.
Surgical Treatment of Intracranial Angiomatous Malformations. C. Pilcher, W. F. Meacham and C. A. Cobb.—p. 342.
Complications Following Subtotal Gastric Resections Performed Since June, 1944, for Peptic Ulcer in 132 Patients: Comparison with Complications Following Vagotomy in 138 Patients. C. K. Lyons and K. S. Grimson.—p. 350.
New Surgical Treatment for Hirschsprung's Disease. O. Swenson. —p. 371.
Principle of Complete Exclusion in Fistulas of Small Intestine. S. P. Harbison.—p. 384.
Sickle-Cell Anemia: Surgical Problem: II. Further Observations on Surgical Implications of Sickle-Cell Anemia. R. H. Patterson, H. Wilson and L. W. Diggs.—p. 393.
Neck Dissections in Cancer of Lower Lip: Five-Year Results in 179 Patients. J. Modlin.—p. 404.
Permanent Camouflage of Corneal Scars Using Insoluble Tattoo Pigments. K. L. Pickrel, J. T. Metzger, J. Wilde and others.—p. 413.
Pheochromocytoma: Use of Adrenergic Blocking Agents in Operative Management. A. D. Consolo, H. S. Dunbar and B. S. Ray.—p. 428.

Quantitative Aspects of Hemorrhage.—Rudman and Stewart believe that the clinical tests usually employed to evaluate the severity of bleeding in acute hemorrhagic anemia do not always provide a clear picture. They report studies on 58 of 100 patients with bleeding peptic ulcer who were operated on immediately to control the hemorrhage. The results of the studies illustrate the severe degree of anemia and the critical nature of the hemorrhage in these patients. The hematocrit reading does not fall until the plasma volume begins to rise, that is, until new plasma protein enters the circulation, carrying fluid with it. Coincident with the peak value of plasma volume, the hematocrit reaches its lowest point. Thus, if patients are studied before maximal hemodilution occurs, there is a discrepancy between the total red cell mass and the hematocrit value. The red blood cell count, hemoglobin determination and hematocrit reading are all measures of red blood cell concentration, rather than of total circulating red blood cell mass. The former values will vary with changes in plasma volume. Not until all red blood cells lost in bleeding are replaced by an equivalent volume of plasma, will the hematocrit value, red blood cell count or hemoglobin fall to levels indicative of the true seriousness of the anemia. These tests cannot be relied on in the hours immediately following severe hemorrhage. The extent of bleeding may be grossly underestimated. Prior to the stage of maximum plasma hemodilution there is only one reliable index of severity of anemia, and that depends on a measurement of the total circulating red blood cell mass rather than on any study of red cell concentration. Since average transfusions of 2,320 cc. of blood were necessary to produce the 40 per cent increase in red blood cell mass, it may be calculated that an additional 1,450 cc. would be required to bring about restoration of a normal red blood cell mass. This total of 3,770 cc. of blood is equivalent to 60 per cent of the normal blood volume and indicates the large quantities of blood needed for adequate replacement. Patients can survive large and rapid blood losses even in the presence of cardiopulmonary disease and old age. Rapid transfusion of large quantities of whole blood can be safely carried out in these cases.

Sodium Deficiency and Urine Chloride.—Randall and his associates report observations on acute sodium deficiency and evaluate urine electrolyte excretions, particularly urine chlorides, as a guide to parenteral sodium and chloride replacement therapy. Urine, Miller-Abbott tube drainage and other drainages were collected. Exact measurements were made, and irrigating fluids (as in Miller-Abbott tubes) were included in intake and irrigation returns included in output. Sodium deficiency states were observed in acute peritonitis, in hypertension and cardiac failure, in acute ileostomies and in patients with large fluid losses from the gastrointestinal tract with inadequate electrolyte replacement. Adequate replacement of sodium and chloride deficits is imperative. Postoperative sodium and chloride retention was also observed, with edema, hemoconcentration and oliguria appearing with excessive sodium administration. The importance of distinguishing between retention and sodium deficiency is emphasized. Ratios of urine sodium to chloride were analyzed in five groups of surgical patients. The correlation of urine sodium to chloride is high before operation in patients on standard diets and decreases significantly when these patients are given intravenous fluids preoperatively. It changes relatively little with operation. Patients who were given potassium intravenously had somewhat lower postoperative correlation than those who had not received potassium. In two groups of patients with peptic ulcers who had been subjected to partial gastrectomy, postoperative urine sodium to chloride correlation was high when there was no obstruction, but in obstructed peptic ulcers, despite normal plasma sodium, potassium, chloride and HCO_3 (blood bicarbonate) levels preoperatively, urine contained far more sodium than chloride preoperatively. The reverse was true postoperatively, and correlations were poor. Patients who were seriously ill after major surgical intervention showed poor correlation of urine sodium and chloride excretion. Estimation of sodium and chloride excretion and replacement by measurement of urine chlorides alone in major surgical cases is inadequate and may be dangerous. Quantitative determinations of individual ions in blood, urine and drainage are essential if the fluid and electrolyte balance is to be maintained.

Lumbodorsal Sympathectomy for Hypertension.—Simeone and Ramirez discuss responses to sympathectomy other than those of the blood pressure. Such responses are surprisingly few. There is an increased sensitivity to insulin occurring long after sympathectomy. The total blood and plasma volumes are slightly decreased long after lumbodorsal sympathectomy, but the changes are not large enough to warrant attributing to them the effects which sympathectomy exerts on the blood pressure. The ability of the kidneys to clear the blood of mannitol and sodium paraaminohippurate is nearly normal in patients with only moderately severe hypertension, but is severely impaired in patients with severe hypertension. A close correlation exists between the degree of histological change in the kidneys and their ability to excrete mannitol and sodium paraaminohippurate. Patients whose blood pressure was improved one year after sympathectomy had nearly normal renal clearances; those who were not improved by sympathectomy showed

preoperative values which were nearly one-half the normal. The filtration fraction was elevated both in the patients whose blood pressure improved after sympathectomy and in those whose blood pressure was unchanged. Among the former, however, the filtration fraction was decreased by sympathectomy; among the latter, the filtration fraction remained unchanged or increased. The data presented suggest that, in hypertensive patients with pronounced impairment of the rate of glomerular filtration and renal plasma flow, lumbodorsal sympathectomy does not cause a lowering of the blood pressure. A high filtration fraction, per se, however, does not preclude a favorable result.

Tennessee State Medical Assn. Journal, Nashville

43:309-356 (Sept.) 1950

Pulmonary Vessels in Roentgenological Diagnosis. W. B. Seaman and H. M. Wilson.—p. 309.
Endocrinology in Early Pregnancy. G. A. Mitchell.—p. 315.
Liquid Therapeutic Diet. C. J. Speas.—p. 321.
Etiological Aspects of Enuresis. R. Townsend.—p. 328.

U. S. Armed Forces Med. Jour. Washington, D. C.

1:957-1094 (Sept.) 1950. **Partial Index**

*Cryptococcosis: Review of Literature and Report of Case with Initial Pulmonary Findings. H. E. Ratcliffe and W. R. Cook.—p. 957.
Tuberculin Testing of Midshipmen and Recruits of the Navy and Marine Corps. R. O. Canada and R. W. Babione.—p. 971.
*Motion Sickness. F. Harbert and M. Schiff.—p. 979.
Vagus Resection: Study of 19 Cases. L. L. Bean and M. P. Stonestreet.—p. 985.
Army Field Surgeon, Specialist. R. P. Williams.—p. 997.
Clinical Use of Antibiotics: II. Prophylaxis of Infections. P. H. Long.—p. 1001.
Relation of Nitrate Nitrogen Concentration in Well Water to Occurrence of Methemoglobinemia in Infants. K. F. Maxcy.—p. 1007.
Antibiotic Drugs in Venereal Disease Therapy. M. J. Scott.—p. 1017.
Early Detection of Carcinoma of Cervix Uteri. S. S. Sarkisian.—p. 1021.
Malacoplakia of Urinary Bladder: Report of Case. C. E. Boonstra and P. L. Bates.—p. 1029.
Circumcision in the Adult. J. A. Millspaugh.—p. 1035.
Treatment of Herpes Zoster with Protamide. W. C. Marsh.—p. 1045.
Current Trends in Medical Education. M. A. Casberg.—p. 1065.
Coordination of Administrative and Professional Effort in Army Hospitals. W. F. Bowers.—p. 1077.
About the Army Medical Service: Medical Corps Officer Classification. F. J. Fielding.—p. 1081.

Cryptococcosis.—According to Ratcliffe and Cook, cryptococcosis is a chronic or subacute infection that may involve any part of the body, but that has a special predilection for the brain and meninges. The authors found 127 cases of cryptococcosis in the literature, to which they add one of their own. Their patient, a man aged 30, was admitted to the hospital because of roentgenographic evidence of a pulmonary lesion. The only complaint was pain of one day's duration in the right lower portion of the chest that occurred one month before admission. The chest was resonant throughout. Auscultation revealed a few high-pitched, sibilant rales. Spinal fluid examination gave normal results, but india ink preparation of the sputum revealed numerous yeast cells with a clear halo, presumably Cryptococcus neoformans. Sputum cultures from the same specimen revealed budding cells with halo-like capsules, morphologically characteristic of C. neoformans. Intraperitoneal injection of washings from these cultures into white mice caused death within eight days of all animals that had received injections. C. neoformans was found in them at autopsy. The patient complained of a headache. Subsequently, spinal punctures showed increasing pressures and india ink preparations of the fluid yielded organisms morphologically characteristic of C. neoformans. The patient died one month later. Necropsy revealed that the lesions were largely confined to the lungs and the brain. Pulmonary lobectomy had at first been considered for this patient, because the roentgenogram of the chest and the finding of C. neoformans in the sputum were the only indications of cryptococcal infection. Sensitivity testing showed C. neoformans to be sensitive to polymyxin in vitro, but the infection did not respond to treatment with this drug. Penicillin, streptomycin, sulfadiazine and potassium iodide were used without success. The authors feel in cases of pulmonary involvement of localized nature, in the absence of systemic spread, the involved lobe of the lung should be surgically removed.

Motion Sickness.—Harbert and Schiff believe that motion sickness cannot be ascribed to a single organ. It is the result of a break in accommodation by the spinal and medullary centers from continual unusual stimuli arising in many organs. In the order of importance, the vestibular, proprioceptive, visual and the other senses are involved. Stimuli from various organs normally cause automatic adjustments of the body to changes in its relation to the force of gravity. These sensations are correlated and integrated in cerebellar, medullary and spinal centers. When these centers are repeatedly subjected to unusual stimuli, a point is reached where they cause more than the proper reflexes. A spilling over to other medullary and higher centers occurs and produces symptoms of motion sickness. Symptoms of motion sickness are influenced by psychic factors, such as memory, association and fear. In airsickness, especially, the unsatisfactory rationalization of fear is a great factor. Symptoms of seasickness vary. In the treatment, general hygienic measures a day or two before sailing with avoidance of last minute parties, bustle and nervous tension are advantageous. If one lies down with the eyes closed or reclines in a deck chair facing away from the sea, both visual and skeletal reaction to stimulation will be reduced. Good ventilation and absence of odors are helpful. Physical exertion tends to reduce the tendency to lethargy. Atropine, scopolamine (hyoscine) hydrobromide and hyoscyamine have been prescribed because they inhibit the vagus or parasympathetic nerves. The barbiturates, preferably one of the quick-acting ones such as secobarbital (seconal®) sodium or pentobarbital (nembutal®) are probably useful adjuncts in the early phases; besides alleviating apprehension and worry, they reduce the sensitivity of the medullary centers and so facilitate adjustment. Pentobarbital is excellent when the motion of the ship produces insomnia. Dimenhydrinate (dramamine) has proved highly satisfactory in the prophylaxis as well as in the treatment of motion sickness.

Virginia Medical Monthly, Richmond

77:445-512 (Sept.) 1950

*Lipoid Pneumonia Due to Use of Mineral Oil as Laxative. E. Baron.—p. 448.
Obstetrical Factors in Infant Mortality. E. S. Groseclose.—p. 451.
Tuberculosis Control Program in General Hospital. E. C. Harper and W. E. Roye.—p. 455.

Lipid Pneumonia Caused by Mineral Oil Laxative.—According to Baron, lipid pneumonia can be classified as a man-made disease. Oil in nose drops, in vitamins or in a mineral oil laxative can cause this condition. Cases of lipid pneumonia in young children are understandable in view of the fact that the administration of oily vitamin preparations is frequently associated with struggling and possible aspiration. Most fish oils and free fatty acids are the more irritating types for pulmonary tissues. Mineral oil is not assimilable; being a saturated hydrocarbon, it cannot be digested in the body and, consequently, remains in the lungs indefinitely, except for the small amounts which appear in the sputum. Anatomic defects in the mouth, palate, tongue, larynx or esophagus, neurological disturbances that interfere with swallowing, the use of forced feedings and the fact that mineral oil, being bland, does not initiate the cough reflex, are factors that predispose to the aspiration of oil. When mineral oil reaches the dependent portions of the lungs, it first remains free in the alveoli but is later picked up, in droplets, by the macrophages. Some of the mineral oil can be disposed of in the sputum, and a small amount reaches the lymph nodes, but the bulk remains indefinitely in the lung, where it causes the development of fibrous tissue. This renders the lesion detectable by roentgen ray. The lower lobes, particularly the right, are most likely to be involved. The abnormal lung is a fertile soil for repeated attacks of bronchopneumonia, which may be responsible for the death of the patient. The author presents histories of six patients in whom necropsy disclosed lipid pneumonia. All had received mineral oil as a laxative, but death had been caused by other conditions. Since oil cannot be removed from the lungs, prevention is the only treatment. Laxatives containing mineral oil should not be used, nor should oily nose drops be instilled in the respiratory tract.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted.
Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

62:351-394 (Sept.) 1950

Reticulohistiocytoma ("Ganglioneuroma") of Skin. F. G. Zak.—p. 351.
Vitamin A in Case of Acquired Localized Keratosis Palmaris et Plantaris and One of Acquired Pachyonychia. A. D. Porter and H. Haber. —p. 355.
Lepra, Psoriasis, or the Willan-Plumbo Syndrome? B. Russell.—p. 358.
Ulcerative Tuberculides. E. E. Hammerschmidt and G. W. Korting. —p. 361.

British Medical Journal, London

2:639-690 (Sept. 16) 1950

Congenital Heart Disease: Review of Its Clinical Aspects in Light of Experience Gained by Means of Modern Techniques. P. Wood. —p. 639.
Diffuse Eosinophilic Arteritis. G. Lumb.—p. 645.
Observations on Symptomatology and Treatment of Cervical Erosion. J. R. W. Ross.—p. 647.
*Gastric Ulcer Occurring After Vagotomy. D. M. Morrissey.—p. 651.
Epidemic of Benign Dry Pleurisy. D. G. H. Sylvester.—p. 653.
Adrenal Insufficiency After Suramin Treatment of Pemphigus. L. J. Mahoney and H. J. Barrie.—p. 655.
Indications for Globin Insulin. D. W. Pugh.—p. 657.
Some Aspects of Schistosoma Mansoni Infection. D. Mustafa.—p. 658.

Gastric Ulcer After Vagotomy.—According to Morrissey, the literature records three instances of gastric ulceration developing after successful vagotomy for a duodenal ulcer. These three instances occurred in a total of 268 patients subjected to vagotomy. The complication appears to be rare but is important because of the malignant potentiality of gastric ulcers and because these ulcers are sometimes remarkably painless after vagotomy. The author reports two additional cases, which provide further evidence of the inefficacy of vagal section in interrupting the course of gastric ulceration. These two cases were reported from a series of 79 patients with duodenal ulcer who were treated by vagotomy alone. In both cases the gastric ulcer developed within six months of vagal section. Morrissey believes that vagotomy is unsuitable as a treatment of gastric ulceration and that it does not confer protection against the development of gastric ulceration.

Glasgow Medical Journal

31:255-278 (Aug.) 1950

*Irreducible Intussusception Due to Meckel's Diverticulum: Report of Case with Recovery in Infant of Eight Months Old. J. Aitken.—p. 255.
*Benign Spontaneous Pneumothorax: Study of 70 Cases. A. G. Melrose. —p. 263.

Intussusception Due to Meckel's Diverticulum.—Aitken reports an eight month old infant with an irreducible intussusception caused by a Meckel's diverticulum. Treatment consisted of resection of the involved segment of the bowel and side to side anastomosis. The child recovered. This treatment is probably the best for an irreducible enteric intussusception. Detailed examination of the symptoms and signs does not suggest any method of differentiation between this type of intussusception and the usual enterocolic type when the patient is an infant, although the previous history and duration of the symptoms may be helpful.

Benign Spontaneous Pneumothorax.—Melrose presents a study of 70 cases of benign spontaneous pneumothorax by the follow-up method, with particular reference to etiology and to the subsequent incidence of pulmonary tuberculosis and of recurrence. The 70 patients were admitted for treatment of benign spontaneous pneumothorax to the medical wards of two Glasgow hospitals in the ten year period 1939-1948. They were asked to report for clinical examination, interrogation and chest roentgenogram, and 58 responded. The remaining 12, who were unable or unwilling to come to the hospital, provided the desired information by letter, telephone or to a social worker. Of the 70 patients, 65 were males. Physical exertion is not considered an important factor in the causation. Twenty-three per cent of the cases were recurrent. Pulmonary tuberculosis developed in four patients. If the unduly high incidence of pulmonary tuberculosis in the Glasgow area is taken into consideration, it may be assumed that tuberculosis is no more likely to develop in a person with benign spontaneous pneumothorax than in the average person in the general community. Spontaneous pneumothorax was not associated with any special type of physique. There were no familial cases.

Journal of Laryngology and Otology, London

64:455-546 (Aug.) 1950

Morgagni-Stewart-Morel Syndrome and the Otologist. C. A. Hutchinson. —p. 455.
Speech Audiometry in Assessment of Deafness. E. D. D. Dickson and D. L. Chadwick.—p. 464.
*Perceptive Deafness Associated with Severe Neonatal Jaundice: Report of 16 Cases. N. Crabtree and J. Gerrard.—p. 482.
Residual Osteitis of Alveolus of Maxilla as Cause of Facial Pain. P. S. Meyrick and L. S. Manion.—p. 507.

Perceptive Deafness and Neonatal Jaundice.—Gerrard reported 22 patients with kernicterus due to Rh isoimmunization who were over three years of age; the oldest was 23 years of age. Crabtree subjected 18 of these patients to a thorough otological examination. The remaining four were too backward mentally to permit an audiometric examination. These four patients can hear, but the toneless speech of one of them suggests a perceptive deafness in the range of high frequencies. Two additional patients with kernicterus, unassociated with Rh incompatibility, were examined audiometrically and proved to have perceptive deafness. Among the aforementioned 18 patients, there were 14 with perceptive deafness, two being completely deaf. Thus, 16 of 24 patients with kernicterus had perceptive deafness. The authors point out that there are a large number of cases of perceptive deafness of obscure origin. When Carruthers focused attention on the relation between maternal rubella during the first three months of pregnancy and deafness of the child born subsequently, it was hoped that the number of these cases might be noticeably reduced. It has now been shown that some of these cases are associated with a severe neonatal jaundice; this jaundice is usually but not invariably due to Rh isoimmunization. This type of deafness differs pathologically from that associated with maternal rubella, for rubella prevents or hinders the normal development of the primitive cells forming the organ of Corti, whereas in deafness associated with kernicterus the organs of hearing develop normally but the cochlear nuclei are damaged. Crabtree and Gerrard stress that perceptive deafness, usually of high tone type, is common in kernicterus. The severity of the deafness bears no relation to the severity of the other disabilities. All patients with kernicterus should be examined by pure tone audiometry. Assessment of intelligence in cases of kernicterus should be made in the light of the otological findings, and the type of intelligence tests selected accordingly. A history of severe neonatal jaundice may be obtained in some cases of perceptive deafness of unknown cause dating from early childhood.

Lancet, London

2:353-368 (Sept. 2) 1950

*"Medical Sympathectomy" in Hypertension: Clinical Study of Methonium Compounds. R. Turner.—p. 353.
*Pentamethonium in Hypertension. S. Saville.—p. 358.

"Medical Sympathectomy" in Hypertension.—According to Turner, the hexamethonium and pentamethonium compounds block the transmission of nerve impulses through autonomic ganglions. The author reports on the effects of pentamethonium (or hexamethonium) iodide (or bromide) when given by intravenous injection to hypertensive patients, on the effects of intramuscular injections and on oral therapy. Several case histories are presented that illustrate some of the difficulties encountered in this form of treatment. The author

concludes that the methonium drugs have as yet no place in the routine management of patients, though they may prove useful in the treatment of resistant symptoms related to hypertension. More information is needed about their precise action, and for the present it will be most profitable to study their effects in patients who might otherwise be treated by sympathectomy. There is no evidence as yet that continuous reduction of blood pressure by drugs which paralyze the autonomic ganglions will prove beneficial to hypertensive patients, and it may prove harmful to some. There is no reason to doubt that other more efficacious and perhaps more selective preparations will be made, and possibly a study of the methonium compounds will throw light on the etiology of essential hypertension.

Pentamethonium in Hypertension.—Saville says that his present practice is to test the initial response to pentamethonium salts by giving one or two doses of 50 mg. intramuscularly and then to start daily treatment by mouth. The oral dosage varies, but is usually 0.5 to 1.0 Gm. every four, six or eight hours. The first dose should be taken as early as possible in the day. No significant therapeutic difference between the bromide and the iodide salts was observed. The drug is most conveniently taken in the form of flavored aqueous solution. Results obtained with pentamethonium in five patients suggest that pentamethonium bromide may be useful in the treatment of at least some forms of hypertension. It relieved troublesome symptoms in all these cases and apparently arrested the progress of the disorder. The initial improvement obtained with pentamethonium was maintained in all but one of the five patients. The condition of this patient was so grave that symptomatic relief was the most that could be expected. Time alone will show whether pentamethonium can reverse a steadily progressive condition, but it is conceivable that early and assiduous treatment will improve the prognosis.

Medical Journal of Australia, Sydney

2:205-240 (Aug. 5) 1950. **Partial Index**

*Influence of Lead Absorption on the Ratio of Large to Small Lymphoid Cells. D. O. Shiels.—p. 205.
Psychiatry and Eugenics. C. R. D. Brothers.—p. 211.
Pneumonokoniosis in Queensland Foundries. D. Gordon.—p. 217.
Some Practical Aspects of Venereal Disease. N. D. G. Abbott.—p. 224.

Ratio of Large to Small Lymphoid Cells in Lead Poisoning.—Shiels cites a report by Ferguson and Ferguson, which revealed that in men exposed to lead there is an increase in the ratio of large lymphocytes plus monocytes to small lymphocytes. The Fergusons believed that the increase in the percentage of large mononuclear cells was more closely related to the clinical condition than was the stippled cell count, the blue line, the red cell count or the percentage of hemoglobin. Shiels was able to confirm the observations made by the Fergusons in an earlier investigtion. In a study of 400 employees of a new plant producing storage batteries, he again found confirmation of the report of the Fergusons. In cases of lead poisoning, the ratio of lymphoid cells falls again to within the range of the ratio for unexposed persons. If the ratio falls to less than 2, lead poisoning is imminent if not already present. Recovery from lead poisoning is accompanied by a rise in the ratio to above 2 in the early stages. In the later stages of recovery the ratio again falls to the range of ratios of unexposed persons. In the case of new workers, there is a direct correlation between the cell ratio and the urinary lead concentrations as exposure increases. The cell ratio is a valuable guide to the prevention and diagnosis of lead poisoning.

South African Medical Journal, Cape Town

24:681-704 (Aug. 19) 1950. **Partial Index**

Placental Implants in Ophthalmology. S. Etzine.—p. 681.
*Stevens-Johnson Syndrome: Report of Two Cases Treated with Aureomycin. L. J. A. Lowenthal, J. L. B. Marais and H. D. Ruskin.—p. 686.
Recurrent Non-Specific Urethritis Associated with Respiratory Catarrh, Stomatitis, Conjunctivitis and Erythematous Vesicular Eruption of Legs and Forearms. J. Helman.—p. 688.
The Myth of the Dropping Kidney. R. C. Begg.—p. 690.

Stevens-Johnson Syndrome.—According to Loewenthal and his associates, the condition which in the English literature is now generally called Stevens-Johnson syndrome has also been designated as erythema exudativum multiforme with pneumonia, ectodermosis erosiva pluriorificialis and dermatostomatitis. The cutaneous lesions probably represent an allergic reaction to a variety of substances, bacterial, fungal, viral or chemical. The condition behaves as a specific infective one, with involvement of the skin, eyes, mucous membranes and lungs. The disease may last 10 days to four weeks or more, and some survivors are left with permanent ocular damage. The authors present the histories of two patients with this disorder, a woman aged 53 and a 10 year old boy. In both patients the disorder responded within 48 hours to treatment with aureomycin, whereas sulfadiazine and penicillin therapy had failed. The favorable response to aureomycin therapy agrees with the observations reported by others, and the authors believe that aureomycin acts as a specific remedy in this disease.

Acta Chirurgica Scandinavica, Stockholm

99:479-578 (June 5) 1950. **Partial Index**

Epiphrenic Diverticula of Esophagus: Report of Case Operated on. K. Dohn and O. Jacoby.—p. 479.
Intestinal Distention in Peritonitis. H. Wahren.—p. 439.
Acute Necrosis of Pancreas: Analysis of Clinical Material. Y. Edlund.—p. 497.
Venous Pressure in Varicose Veins in Patients with Incompetent Communicating Veins: Study of Statics and Dynamics of Venous System of Lower Extremity Under Pathological Conditions. H. Stürup and I. C. Højensgård.—p. 518.
Cervicofacial Actinomycosis—Typical and Nontypical. M. Glahn.—p. 537.
*Cancer Cells in Prostatic Secretion. G. Jönsson and C.-M. Fajers.—p. 545.
Results of Myelographies with Water-Soluble Media. C.-E. Johanson.—p. 560.
*Use of Tibial Graft as Retrosternal Support in Funnel Chest Surgery. H. Wahren.—p. 568.

Cancer Cells in Prostatic Secretion.—Jönsson and Fajers report on 110 patients with various prostatic disorders admitted to the Lund Surgical Clinic. Study of prostatic secretion according to the method of Papanicolaou made a diagnosis of cancer possible in 16 of the 110 cases. In 11 others, cancer was suspected, and in five of these the diagnosis was later verified. Two cases, which on the basis of the cells in the secretion were first given diagnosis of hypertrophy, were subsequently established as cancer. Diagnosis was correct in nearly 90 per cent of the cancer cases in which adequate amounts of secretion could be obtained. The authors feel that search for cancer cells in the secretion has afforded such encouraging results that it should be included as a routine method in diagnostic measures in cancer of the prostate.

Tibial Graft as Retrosternal Support in Funnel Chest.—According to Wahren, the indications for surgical correction of a funnel chest are those of a disturbance of the cardiac function, the cosmetic considerations and the mental attitude of the patient with regard to the malformation. He describes the case of a girl, aged 10, with a funnel chest deformity since birth, in whom the depression of the chest had become more pronounced, so that during the last year she suffered from dyspnea. The lower part of the sternum was depressed to the depth of about 4.5 cm. Wahren describes a new type of operation that he used in this case. He employed a tibial graft, which was inserted under the elevated sternum to keep the latter in the desired position.

Ann. Medicinae Internae Fenniae, Helsinki

39:73-150 (No. 2) 1950. **Partial Index**

Motility of Stomach During Gastric Pain. P. Brummer and A. Bundul.—p. 73.
Acidity of Gastric Contents After Meals as Compared to Results of Gastric Analysis. P. Brummer and I. Ruikka.—p. 81.
*Blood Picture in Subacute Bacterial Endocarditis Treated with Penicillin. K. Dammert.—p. 87.
Incidence of Urinary Tract Infection in Women. P. I. Halonen and R. Halonen.—p. 106.
Gastric and Duodenal Ulcer: Cases Treated at Medical Out-Patient Department 1937-39 and 1946-49. A. Setälä and A. Telkkä.—p. 113.
Incidence of Diarrhea in Infants on Diet of Human Milk, Milk Powder and Commercial Milk: Investigations Performed in Helsinki, Tampere, Jyväskylä and Lappeenranta in Late Summer of 1949. A. Ylppö, N. Hallman, M. Donner and others.—p. 142.

Blood Picture in Bacterial Endocarditis.—According to Dammert, subacute bacterial endocarditis is a typical example of an infectious disease that causes anemia. Some investigators assume that infectious anemias are due to iron deficiency. Knisely found that an intravasal agglutination occurs in infections and that the blood cells in such agglutinations are dis-

solved by the phagocytes in the liver and the spleen to such an extent that anemia results. Of 54 patients with bacterial endocarditis reported by Dammert, 38 were treated with penicillin. About half the patients died in the hospital during the treatment. The cause of death was congestive heart failure, thromboembolism or relapse. A close connection could be established between the course of the endocarditis and the anemia. Penicillin therapy usually brings about an improvement in the blood picture, whereas other treatments usually impair it. A daily dose of 300,000 units of penicillin gave better results than a smaller amount. Congestive heart failure impedes recovery. It is difficult to assess the effect of penicillin in patients with this condition. Signs of continued infection remain. Knisely's theory may offer an explanation. Severe subacute bacterial endocarditis is accompanied by intravasal agglutination. Red blood cell aggregates appear in the vascular bed and impede the local blood stream, causing injury to the vascular walls, leakage of fluid, and extravasation of red blood corpuscles into the tissue. This so-called "sludge-factor" of the blood concurs with other factors, which also cause loss of fluid through the endothelium. In patients with edema, large aggregations of blood corpuscles, delayed blood flow, loss of plasma and hemoconcentration are observed. It may be assumed that the penicillin has prevented bacteremia but has not counteracted the sludge-factor, which is maintained by the heart failure. Thromboembolic processes are common. Hemorrhages and alimentary factors may also play a part in the causation of anemia.

Deutsche medizinische Wochenschrift, Stuttgart

75:1013-1060 (Aug. 11) 1950. **Partial Index**

Course of Boeck's Disease in Lung. H. Hartweg.—p. 1013.
Methods of Investigating Disturbances in Diencephalohypophysial System. G. Damm.—p. 1016.
*Blood Transfusion in Children's Clinic: Addition of an Arsenoxide to Prevent Transfusion Syphilis. J. Brock and G. Conradi.—p. 1021.
*Possibility of Preventing Transfusion Syphilis by Chemotherapy. R. Fussgänger.—p. 1024.
Thiosemicarbazone in Treatment of Tuberculous Empyema. H. Wagener. —p. 1031.

Arsenoxides to Prevent Transfusion Syphilis.—Brock and Conradi used fresh, citrated blood, to which an arsenoxide preparation had been added to prevent the transmission of syphilis, for transfusions in 661 infants and 278 children. The blood was usually given in divided transfusions, over two or three days. No undesirable secondary effects were observed. The clinical effect of the transfusion was not altered, and there was no significant difference in the resistance of the erythrocytes in three day old citrated blood, whether or not the arsenoxide preparation had been added.

Prevention of Transfusion Syphilis.—The increased use of blood transfusion and the greater incidence of syphilis have directed attention to the danger of transmitting syphilis in this way. According to Fussgänger, the literature contains records of more than 100 cases of transmission, and he assumes that many others have not been reported. The fact that it is difficult to demonstrate syphilis during the first six weeks after infection has taken place is largely responsible for the transmission of syphilis by transfusion. Efforts have been made to prevent this transmission by adding spirocheticidal substances to transfusion blood. Since experimentation with the syphilis spirochete proved difficult, the spirochete of recurrent fever was employed. It was found that these spirochetes remain viable and virulent for several weeks in stored blood. Certain arsenoxides kill the spirochetes in a short time, and the quantities required are so small that no harmful effects need be feared in the recipient of the blood. The clinical application of this procedure is being investigated.

Gazzetta Medica Italiana, Milan

109:77-96 (April) 1950. **Partial Index**

*Combined Streptomycin, Sulfadiazine and Penicillin in Therapy of Brucellosis. D. Anglesio.—p. 85.

Brucellosis.—Anglesio reports on two groups of 11 patients each, who were given streptomycin and sulfadiazine alone or combined with penicillin. Both treatments appeared to be of equal value provided treatment was begun within the three first weeks of the course of the disease. Combined treatment is indicated particularly in patients with cardiovascular disease or pulmonary tuberculosis in whom administration of brucella vaccine is contraindicated.

Maandschrift voor Kindergeneeskunde, Leyden

18:45-80 (No. 2) 1950. **Partial Index**

Difficulties and Possibilities in Diagnosis of Tuberculous Meningitis. W. van Zeben.—p. 45.
*Gangrene After Scarlet Fever. J. G. F. Bethe.—p. 55.
*Indications for Splenectomy in Children with Essential Thrombopenia. T. D. Stahlie.—p. 64.

Gangrene After Scarlet Fever.—Bethe cites a 5 year old girl in whom gangrene of both legs developed after an attack of scarlet fever. It was decided to amputate the left leg 8 cm. below the groin. Following the amputation, the general condition of the child improved rapidly and necrotic tissue sloughed off the right leg. The child could be discharged after five months with a temporary prosthesis. The author reviews the literature on the occurrence of gangrene of the extremities after scarlet fever.

Splenectomy in Essential Thrombopenia in Children.—Stahlie discusses the pathogenesis of essential thrombopenia in children and reviews the various treatments, pointing out that splenectomy is the only causal therapy. He shows on the basis of seven case histories that splenectomy is rarely indicated in children, as the disease shows a tendency to spontaneous cure even after long periods (more than two years). Splenectomy should not be done in cases of simple hypoplasia of the megakaryocytes.

Medicina Clinica, Barcelona

8:79-132 (Aug.) 1950. **Partial Index**

*Antabuse in Treatment of Chronic Alcoholism. A. Marti-Granell and J. M. Pedrosa.—p. 122.

Antabuse®.—Marti-Granell and Pedrosa report on tetraethylthiuram disulfide (antabuse®) therapy combined with psychotherapy in seven alcoholics. A daily dose of 0.75 or 0.25 Gm. of this drug was well tolerated by the patients for three to four months, during which time the desire to drink in the patients was not manifest or was controlled by the patient, who himself requested further administration of the drug. Four patients complained of asthenia, paresthesia and neuritic pain. These complaints disappeared after administration of thiamine in the course of psychotherapy. The authors direct attention to the fact that tetraethylthiuram disulfide is well tolerated but may be harmful. The drug should be given only by a physician. It should be sold only to physicians.

Münchener medizinische Wochenschrift, Munich

92:329-408 (June 10) 1950. **Partial Index**

Deficiency in Carotenoids: Its Relation to New Goiter Wave. H. Haubold. —p. 329.
Cutaneous Reactions Following Intracutaneous Injection of Male Sex Hormone: Differences in Pregnant Women Due to Sex of Fetus. H. Doetsch.—p. 337.
*Vitamin E and Blood Sugar. H. E. Levens and M. Rösgen.—p. 339.
*Constitutional Changes in Chronic Tuberculous Meningitis. H. Schönenberg.—p. 343.
Agglutination-Inhibition Test of Hirst in Diagnosis of Virus Influenza. M. Bock.—p. 365.

Vitamin E and Blood Sugar.—Levens and Rösgen cite earlier reports indicating a connection between vitamin E and sugar metabolism and point out that if this vitamin acts on the blood sugar regulating centers in the hypophysis or the diencephalon, then it should produce an increase in the blood sugar level. They studied the effect of alpha tocopherol in women who had been hospitalized for such disorders as hypertension, cholecystopathy, bronchitis, adnexitis, heart lesions and cervical polyps, but who had no disturbance of the carbohydrate metabolism. The fasting blood sugar curves of these women were ascertained before and after injection of isotonic sodium chloride solution. Then 60 mg. of alpha tocopherol was injected, and following this the blood sugar content was determined at half hour intervals. Tolerance tests were then made with dextrose, epinephrine and insulin. Either immediately or 24 hours before the tolerance test, 60 mg. of alpha tocopherol was given. In seven

of 29 patients the fluctuations in the blood sugar were so slight after the injection of vitamin E that they differed little from the "empty" blood sugar curves (no injection or only isotonic sodium chloride solution). The blood sugar values in all the other women tested showed deviations averaging 40 per cent from the normal. All women finally showed a decrease, but in a few instances this was preceded by an increase. The authors ascribe this increase to counterregulatory influences. The changes after epinephrine and dextrose tolerance tests were similar. The blood sugar values were usually higher; the peak was reached faster, and the decrease was slower than without administration of the alpha tocopherol. Moreover these effects were usually more pronounced when the vitamin had been given immediately rather than 24 hours before the tolerance test. The insulin tolerance tests disclosed an inhibition of the blood sugar decreasing effect. The authors conclude that administration of the vitamin influences the blood sugar level by rendering it more unstable, with a tendency toward reduced values. Its point of attack has not been ascertained, and there were no indications of a direct influence on the diencephalohypophysial system. The authors believe that the level of the vitamin E content in the blood plays an important part in the peripheral phases of carbohydrate metabolism.

Constitutional Changes in Chronic Tuberculous Meningitis.—Schönenberg points out that deafness, blindness, spastic paralysis and other defects were observed in patients who have survived tuberculous meningitis after streptomycin therapy. Such sequelae have usually been ascribed to incorrect dosage or inadequate purification of the antibiotic. In the Italian literature Bulgarelli called attention to somatic constitutional changes as the result of the disease itself. Schönenberg made similar observations on two children, aged 9 and 6. Adiposity of the type observed in Cushing's disease or in adiposogenital dystrophy developed in these children during their convalescence after tuberculous meningitis. In one child, adiposity was associated with striae distensae and osteoporosis. The other child had neither osteoporosis nor striae but a genuine adiposogenital dystrophy, and there were psychointellectual changes; intelligence was somewhat retarded, and silly behavior predominated. Extreme forms of obesity have been noted after encephalitis. The so-called tuberculous meningitis is really, particularly when treated with streptomycin, a tuberculous encephalomeningitis. Either certain hypophysial or diencephalic centers might have been involved in the disease process, or changes in blood perfusion and deficient function may have resulted from the vascular changes caused by tuberculous meningitis. Bulgarelli's assumption of pressure produced by the dilated third ventricle are less valid.

Nederl. Tijdschrift v. Verlosk. en Gynaec., Haarlem

50:171-266 (No. 3/4) 1950

*Appendicitis and Pregnancy. F. J. J. van Assen.—p. 171.
Lower Nephron Syndrome. G. A. Lindeboom.—p. 183.
Cystic Degeneration of Ovaries. B. H. Wormgoor.—p. 201.

Appendicitis and Pregnancy.—According to van Assen, the history provides the most reliable diagnostic data in appendicitis occurring during pregnancy. The appendix in pregnancy becomes displaced, so that the tip almost reaches the costal arch. As the result of this dislocation, the point of tenderness is also changed. During the early period of pregnancy, the symptoms are not much different than the usual ones, but as pregnancy advances, the picture changes. The point of tenderness is now higher up, and Rovsing's sign is rarely elicitable. Diarrhea or constipation are of no diagnostic importance here. Laboratory data are likewise of little value. Leukocytosis, for example, normally occurs in pregnancy. The following conditions must be considered in the differential diagnosis: extrauterine pregnancy, salpingitis, abortion and torsion of an ovarian tumor during the early part of pregnancy; and pyelitis, renal or ureteral calculi, ileus and disorders of the gallbladder during the advanced stages of pregnancy. The most frequent complication of appendicitis during pregnancy is abortion. In simple appendicitis the incidence has been estimated at 11 per cent, in the presence of an abscess at 66 per cent and in the presence of a diffuse peritonitis at 72 per cent. The author presents four case histories and suggests that treatment today can be conservative. Cesarian section is no longer necessary, since the administration of chemotherapeutics or antibiotics, of progesterone and estrone and the use of gastrointestinal decompression make the prognosis much more favorable for both mother and child. Simple appendectomy is the method of choice.

Nordisk Medicin, Stockholm

44:1229-1268 (Aug. 4) 1950. **Partial Index**

*Wilms' Tumor in Children. Review. A. K. F. Jacobsen.—p. 1229.
*Fibrosarcomas and Their Prognosis. G. F. Saltzmann.—p. 1235.
Cytological Diagnosis of Bronchial Cancer. H. Lindeman.—p. 1240.
Six Cases of Wilms' Tumor in Children. A. K. F. Jacobsen.—p. 1244.
Nevus Epithelioma Cylindromatosus with Dominant Inheritance Through Four Generations. R. Weyde.—p. 1249.

Wilms' Tumor in Children.—Jacobsen says that the literature records about 1,200 cases of Wilms' tumor. The tumor occurs most often between the ages of 2 and 3, rarely after the fifth year, is found equally often on the right and the left side and is seldom bilateral. It varies in size from small nodes in the renal substance to tumor formations occupying half the abdominal cavity. It is well circumscribed and metastatizes late, through the venous system. In about 70 per cent of the cases medical aid is sought because of the tumor, in not quite 10 per cent because of hematuria, in some cases because of atypical symptoms; in about 20 per cent, pain is the initial symptom. The results of examination of the blood and urine are uncertain. Differentiation from other retroperitoneal tumors, particularly neuroblastomas, may be difficult. Biopsy is cautioned against because of the risk of spread along the puncture line and damage to the barrier formed by the tumor capsule, while unnecessary manipulation of the tumor may facilitate passage of tumor cells into the blood vessels. Because of the insidious nature of the disease, early diagnosis is made in only about 5 per cent of the cases. Transperitoneal nephrectomy is recommended as the standard surgical method. Authors do not agree as to the advisability of preoperative roentgen treatment, but there is some agreement that it should be used postoperatively. Radium treatmen has been given in but a few cases and without success. Untreated cases are fatal in the course of less than one year. The shorter the duration of the disease the better the prognosis. In more than half the patients surviving five years, the onset occurred in the first year of life. There is no relation between the size of the tumor and the chance of recovery. Metastases to the lungs need not make the condition hopeless. The prognosis is better in tumors of predominantly epithelial structure. Recurrence is seen in about 80 per cent of the cases in the first year after operation. About 5 per cent of the patients survive five years or more.

Prognosis of Fibrosarcomas.—Saltzmann reports on 80 cases of fibrosarcoma treated from 1936 to 1948. The sexes were equally represented. Thirty-six patients are well, 21 of these after a five year observation period. Half the patients who died lived one year after diagnosis. The 16 cases with certain metastases at the start of treatment were all fatal. In 24 patients, the tumor recurred after attempted radical treatment; 10 of these were well after five years. Multiple fibrosarcomas occurred in only three instances. Microscopically, the tumors vary in the general tissue structure, with transitions between bundle structures, which have oblong cells, and homogenous structures, which have round cells. To a certain extent, fibrosarcomas connected with the skin are thought to be of bundle structure type, and those not associated with the skin, of homogenous structure, which in some cases has been found to develop from bundle structure. Whether all fibrosarcomas develop in this way is not known. The prognosis is more favorable in fibrosarcomas localized to the skin. Increased cell polymorphism and occurrence of giant cells and of mitoses are unfavorable prognostic signs. The prognosis is often unfavorable in tumors with coarse granulation of the nucleus. Radical surgical intervention is the best form of treatment. Nearly all patients operated on received postoperative radiotherapy, usually in fractionated doses. In all inoperable conditions, fractionated roentgen treatment was given. Radium intubation proved applicable in the treatment of small superficial fibrosarcomas, in practically all of which, however, radical surgical treatment is possible. This material supports the general view that fibrosarcomas are highly resistant to roent-

gen treatment, yet two patients given only roentgen therapy are free from symptoms after an apparently satisfactory observation period. The tumors in these patients were in the thoracic wall and accessible to large roentgen doses.

Policlinico, Pract. Sect., Rome

57:997-1010 (July 31) 1950

*Venous Thrombosis: Anticoagulant Therapy. G. Zannini.—p. 997.
Encephalitis and Streptomycin in Relation to Grippe Infection. A. Pani. —p. 1005.

Anticoagulants for Venous Thrombosis.—Zannini reports a case of phlebothrombosis in a woman aged 50 years following a panhysterectomy. Combined anticoagulant therapy with heparin sodium and bishydroxycoumarin (dicumarol®) was instituted immediately after the appearance of the first symptoms of thrombosis and was continued for 30 days. For the first four days, 250 mg. of heparin sodium was given daily, and the heparin treatment then was continued with 80 to 110 mg. per day. The total dose administered was 3,875 mg. On the first day, 300 mg. of bishydroxycoumarin was given, 200 mg. on the second day and 100 mg. on the following days, up to a total dose of 2,000 mg. Treatment with 400,000 units of penicillin daily had been practiced before the institution of the anticoagulant therapy and was continued simultaneously with the administration of the anticoagulants. A clotting time of from 10 to 26 minutes could be maintained. The maximum prothrombin time obtained was 49 seconds. Pain subsided within 72 hours, while edema still persisted. Definite progressive improvement occurred from the sixth to the twentieth day. Roentgenologic examination at the end of this period revealed an extensive obstruction of the deep vascular trunks of the leg, while repeated roentgenologic examination on the thirtieth day showed that these vascular trunks were recanalized in their entire length. Edema had disappeared, and tracings of the venous pulse were normal. The anticoagulants not only arrest the spread of the thrombotic process but also dissolve the clot and may induce canalization of the vessels involved.

Presse Médicale, Paris

58:973-988 (Sept. 16) 1950. **Partial Index**

Problem of Improving the Results of Systematic Roentgenologic Detection of Pulmonary Tuberculosis. M. Bariéty and C. Coury.—p. 973.
*Syndrome of Hypotony of Biliary Tract: Results of Surgical Treatment. P. Mallet-Guy and L. Durand.—p. 974.
*Therapeutic Trial with Streptomycin in Infectious Jaundice. J. Marassi, M. Amedeo and P. Sassi.—p. 976.

Surgical Treatment of Hypotony of Biliary Tract.—Mallet-Guy and Durand report 135 patients with hypotony of the biliary tract who were subjected to right splanchnicectomy by the subdiaphragmatic route. The operation was performed under manometric and roentgenologic control. Of the 135 patients, 104 were followed for one to nine years. Satisfactory results were obtained in 82.2 per cent; improvement resulted in 5.2 per cent, and 12.6 per cent were therapeutic failures. Biliary hypotony is characterized by abnormally low manometric curves, refractory pain in the region of the gallbladder and, occasionally, attacks of fever and jaundice. Severe dyspepsia and headache complete the clinical picture. The patients are frequently referred to the surgeon with a diagnosis of a syndrome of the common biliary duct, chronic pancreatitis and gallbladder lithiasis. Cholecystectomy is only occasionally indicated for lesions of the gallbladder, while right splanchnicectomy is the method of choice for interrupting the delicate, inhibitory fibers of the muscular apparatus of the biliary tract, particularly in cases of "gallbladder stasis" refractory to medical treatment. Diagnosis of biliary hypotony may be suggested by cholecystography, although the roentgenologic appearance of stasis in the course of a spastic condition of the biliary sphincters may be the same as that of biliary hypotony. When the hypotony is associated with biliary lithiasis, the diagnosis can be established only in the course of a surgical intervention, after puncture of the gallbladder or catheterization of the cystic duct.

Streptomycin in Infectious Jaundice.—Marassi and co-workers treated with streptomycin 10 adult patients, three with epidemic jaundice, four with angiocholecystitis, one with colon bacilli bacteremia and icterus, one with alcoholic cirrhosis and icterus and one with a terminal hepatonephritis. One gram of streptomycin was given daily in divided doses of 0.25 Gm. every six hours for 12 to 15 days. Rapid drop in temperature, pronounced diuresis, disappearance of icterus and frequently a spectacular improvement in the general condition resulted in all the patients except the one with hepatonephritis, in whom treatment was instituted too late. Streptomycin therapy was used in some of these cases after penicillin had failed. The effect of streptomycin was superior to that of penicillin. This was probably due to the multivalent activity of the streptomycin against the bacteria that cause icterogenic septicemia as well as against the bacteria of the biliary tract. Chances for a complete recovery are better the earlier the treatment is instituted. No toxic effects were observed with the dose of 1 Gm. of the drug per day.

Revista Clínica Española, Madrid

37:377-430 (June 30) 1950. **Partial Index**

*Nontraumatic Subarachnoid and Cerebral Hemorrhage: Neurosurgical Aspects. E. Ley, S. Obrador and P. Urquiza.—p. 384.

Nontraumatic Cerebral Hemorrhages.—Ley and collaborators state that subarachnoid and cerebral hemorrhages in young adults are due, in the majority of cases, to spontaneous rupture of congenital cerebral arterial aneurysm or to congenital cerebral arteriovenous angioma, which can be seen by arteriography and can be treated surgically. They describe the neurological symptoms and arteriographic aspects in three series of patients, which included eight cases of repeated subarachnoid hemorrhage from rupture of aneurysm of the internal carotid artery or of its branches, one case of cerebral hemorrhage into the ventricles from spontaneous rupture of a cortical arteriovenous angioma of the middle cerebral artery and one of a spontaneous intracerebral hematoma. Prognosis of cerebral and subarachnoid hemorrhages in young persons is poor, especially if the hemorrhages are repeated. Cerebral arteriography followed by surgical intervention is indicated. In the reported cases, the surgical treatment consisted in (1) ligation of the common carotid artery followed by operation as indicated, in the treatment of a subarachnoid hemorrhage due to rupture of a cerebral arterial aneurysm; (2) ligation of abnormal blood vessels and extirpation of the arteriovenous angioma, and (3) aspiration of blood and blood clots and left frontal lobectomy in left frontal hematoma. The operation is one of emergency, especially if the patient is in coma.

Schweizerische medizinische Wochenschrift, Basel

80:691-710 (July 8) 1950. **Partial Index**

Comparative Study of Metabolic Effects of ACTH and Cortisone. R. S. Mach, P. Ducommun, J. Fabre and others.—p. 691.
*Sympathectomy and Peptic Ulcer. B. Steinmann.—p. 695.
*Effect of Rutin on Blood Coagulation in Regard to Therapy and Prophylaxis with Dicumarol and Its Derivatives. P. Matis, H. Funfack and C. Rockstroh.—p. 701.

Sympathectomy and Peptic Ulcer.—Steinmann reports a woman aged 19 with essential hypertension (210/110 mm. of mercury) due to hypoplasia of the left kidney. Permanent lowering of blood pressure to values varying from 90/65 mm. to 120/85 mm. of mercury resulted from bilateral sympathectomy and splanchnicectomy according to Smithwick's technic. Fifteen months later, severe hemorrhages from a large gastroduodenal ulcer required gastrectomy. History and microscopic examination of the ulcer tissue revealed that ulcer attacks had occurred repeatedly before the sympathectomy and splanchnicectomy had been performed, but without severe complications. This case as well as others in world literature demonstrate that bilateral splanchnicectomy may induce severe ulcer complications, particularly bleeding, in patients with an ulcer in whom bilateral splanchnicectomy had been performed for hypertension. Severe complications of peptic ulcer developed unnoticed because normal epigastric pain sensations were greatly reduced and the vasoconstrictor effect of the sympathetic nerves on the arteries in the splanchnic nerve area was abolished. The vagus tone predominated because of the abolition of the sympathetic counterregulation.

Effect of Rutin on Blood Coagulation.—Matis and co-workers administered to 20 rabbits 50 mg. of rutin per kilogram of body weight by intramuscular route for 40 days. The clotting time and the prothrombin values were determined before,

during and after the administration of rutin. The injections did not cause significant changes in the clotting mechanism of the rabbits' blood. Ten rabbits were fed 8 mg. of bishydroxycoumarin (dicumarol®) per kilogram of body weight and then were given injections of 50 mg. of rutin per kilogram of body weight for 30 days. A dose of 8 mg. of rutin per kilogram of body weight was given once more after rutin had been discontinued. There was no significant difference in the response to bishydroxycoumarin before and after the administration of rutin. Intravenous injections of 400 mg. of rutin for 14 days did not produce any significant changes in 15 patients, in whom the clotting time, retraction time and prothrombin time were determined. Lowering of the prothrombin level to 30 to 45 per cent of the normal level was observed in all the patients after administration of therapeutic doses of 250 mg. of bishydroxycoumarin on the fifteenth and sixteenth day. Results suggest that administration of rutin is justified in the course of anticoagulation therapy with bishydroxycoumarin to prevent capillary damage. Rutin thus makes it possible to employ bishydroxycoumarin in treatment of hypertensive patients, of diabetics, arteriosclerotics and persons of far advanced age.

80:831-852 (Aug. 12) 1950. Partial Index

*Significance of Bronchial Changes Caused by Tuberculous Bronchial Lymph Nodes Regarding Course of Tuberculosis in Children. H. Wissler.—p. 831.
Criticism of "Chemotherapeutic Tamponade of Pulmonary Cavities." W. Rubin.—p. 836.
*Transplacental Passage of Penicillin in Course of Pregnancy. E. Grasset, H. de Watteville and P. Dossena.—p. 841.

Tuberculous Bronchial Lesions in Children.—Wissler reports nine children between the ages of 7 and 15 years with tuberculous bronchial lymph nodes. Compression of an intact bronchus, bulging of an eroded bronchial wall or rupture of a tuberculous bronchial lymph node into the bronchial lumen can cause disturbances of ventilation in the corresponding area of the lung. Bronchoscopy revealed that rupture of a bronchial lymph node occurs relatively frequently. Symptoms vary considerably, or there may be complete absence of symptoms. Lobar or segmental shadows corresponding to the area of involvement of the bronchus are important indications. These shadows may be explained by bronchial occlusion, but may also be due to aspiration of infectious material. They are occasionally seen where bronchial occlusion cannot be demonstrated. Aspiration of infectious material from a ruptured lymph node may cause formation of infiltrates of various type, which play a part in the pathogenesis of progressive pulmonary tuberculosis. Bronchiectasis frequently results from rupture of a tuberculous bronchial lymph node into the bronchial lumen. It has not been established whether this condition may subside or may lead to a chronic condition and fibrosis of the lung.

Transplacental Passage of Penicillin in Pregnancy.—Grasset and co-workers administered 300,000 units of crystallized penicillin G by intra-muscular route to 15 pregnant women. Duration of the pregnancy varied from six weeks to full term. Delivery of the fetus by cesarean section was performed in six instances, while pregnancy was interrupted by an abdominal hysterotomy for various conditions in nine instances. Consequently, the exact interval between the penicillin injection and the removal of the fetus could be determined. It varied from 30 minutes to two hours. Determination of the penicillin concentration in the maternal and fetal circulation, in the fetal organs and in the amniotic fluid showed that transplacental passage of penicillin was limited in all instances. The penicillin concentration in the fetus was nevertheless sufficiently high to insure an effective antibiotic action against various microorganisms sensitive to penicillin, particularly on the Treponema pallidum. These results confirmed those obtained by the authors in experiments on rabbits and guinea pigs and those obtained by other investigators on the permeability of the placental barrier to penicillin. The permeability does not vary much from two months to full term of gestation; effective antisyphilitic treatment, therefore, may be instituted at any stage of pregnancy. Concentration of penicillin in the maternal blood should be fairly high to insure a minimum spirocheticidal level in the embryo and to prevent the development of penicillin resistance in the Treponema pallidum resulting from too small doses of the antibiotic.

Semaine des Hôpitaux de Paris

26:3497-3546 (Sept. 6) 1950. Partial Index

Clinical, Biologic and Histological Study of Fatty Infiltration of Liver in 82 Persons Addicted to Alcohol. R. Cachera, M. Lamotte and S. Lamotte-Barrillon.—p. 3497.
*Course of Fatty Infiltration of Liver in Alcoholics Followed Up by Repeated Puncture-Biopsies. R. Cachera, M. Lamotte and S. Lamotte-Barrillon.—p. 3515.

Fatty Infiltration of Liver in Alcoholics.—Cachera and co-workers report 40 alcoholics, 30 of whom had fatty infiltration of liver in the absence of clinical signs of cirrhosis, while 10 had cirrhosis of the liver. The patients were followed up for six months to two years, during which time they were subjected to liver puncture two to six times. Results of liver biopsy compared with those of clinical examination and liver function tests showed that the course of fatty infiltration in alcoholics is extremely variable. Deposits of fat may persist in the liver for prolonged periods up to two years and may be well tolerated. The size of the liver remained unchanged in 11 patients. Liver function tests remained practically normal. The majority of these patients did not gain weight. Alcoholic intoxication continued. Fatty infiltration was reversible in 13 patients. The excessive fat deposits regressed in the course of several months but did not disappear completely in eight of the patients, while massive fatty infiltration disappeared completely in five patients within one to three months. Microscopic examination showed that the disappearance of the fatty infiltration may be accompanied by repair of the parenchyma. Palpation revealed diminution in the size of the liver. Withdrawal of alcohol, adequate dietary regimen and administration of lipotropic agents, such as methionine, choline and inositol favor the patient's recovery. Repeated puncture-biopsies showed that fatty infiltration may persist for years without inducing much cirrhosis and that fat deposits may be associated with focal or annual cirrhosis. There were other cases in which proliferation of new connective tissue rich in cells occurred in the course of massive fatty infiltration, but the cirrhosis had a progressive course while fatty infiltration disappeared. Puncture biopsy of the liver makes it possible to demonstrate the fat deposits, collagenization, inflammatory attacks and cellular lesions. These observations showed the complexity of lesions that may lead to cirrhosis.

Tuberkulosearzt, Stuttgart

4:495-556 (Sept.) 1950. Partial Index

Course, Development and Prognosis of Silicosis and Silicotuberculosis in German Mining Regions on the West Side of the Rhine. G. Worth and H. Dickmann.—p. 495.
Modes of Application and Dosage of PAS (Paraaminosalicylic Acid) in Pulmonary Tuberculosis. W. Rockstroh.—p. 503.
Serum Cholinesterase in Pulmonary Tuberculosis. H. Hörlein.—p. 512.
*Blockage of Sympathicus Trunk in Treatment of Inert Pulmonary Cavities. S. Witte.—p. 518.
*Treatment of Traumatic Tuberculosis of Fasciae of Thoracic Wall: Question of Muscle Tuberculosis. G. Hensel.—p. 522.
Technic of Opening Pulmonary Cavities. W. Junge.—p. 530.

Blockage of Sympathetic in Tuberculous Cavities.—Witte discusses tuberculous cavities that do not close despite adequate pneumothorax therapy. For blockage of the thoracic portion of the truncus sympathicus, the author injected 5 cc. of a 2 per cent solution of procaine hydrochloride (novocain®) at the level of the third to the fourth rib three times a week. These injections were given for 55 days. Roentgenologic control examination revealed that the cavity had become smaller after 16 days and was no longer detectable after 37 days. Thus, a cavity that was refractory to various types of treatment for a period of eight months disappeared within six weeks in response to blockage of the thoracic sympathetic trunk. Three other cases are cited in which tuberculous cavities with stiff walls responded to blockage of the thoracic sympathetic trunk. The technic of the injection and the sympathetic innervation of the lung are discussed. A favorable influence is exerted by the predominance of the parasympathetic as a result of the exclusion of the antagonistic impulses from the sympathetic.

Fascia or Muscle Tuberculosis.—Hensel believes that lesions referred to in the literature as muscle tuberculosis were in reality tuberculous lesions of the fasciae surrounding the muscles. The contractile tissues of muscles rarely show tuberculous lesions, so that one may speak of an "immunity" of

muscles to tuberculosis. The author observed seven cases of tuberculosis of the thoracic wall. All these patients originally had a pleural empyema. Despite careful rinsing with procaine hydrochloride or with paraaminosalicylic acid, tubercle bacilli must have been carried into the thoracic wall. About two weeks after thoracentesis a dense tumor appeared. Softening and abscess formation in the center of this tumor, with formation of a fistula, were observed later. After the empyema was cured, the fistula was extirpated and the muscles and fasciae were sutured in layers. Examination of the specimen disclosed fascial and not muscle tuberculosis.

Ugeskrift for Laeger, Copenhagen

112:1075-1108 (Aug. 3) 1950

*Investigations on Penicillin Preparations and Dosage. II. K. A. Jensen, P. J. Dragsted and I. Kiaer.—p. 1075.
*Effect of Single Daily Dose of Dipenicillin in Acute Otitis Media with Special Regard to Bacteriology. J. C. Nielsen.—p. 1080.
Terramycin. A. Perdrup.—p. 1089.

Penicillin Preparations and Dosage.—Jensen and his associates state that the penicillin concentration is much lower in the organs than in the blood, higher in acute and subacute foci of infection than in the organs, but lower than in the blood, and in more chronic foci of infection are so low that general administration of penicillin is seldom curative. According to Eagle, the high penicillin concentration in the blood after administration of penicillin sodium G is wasted because the rate of destruction of the bacteria does not increase proportionally with the penicillin concentration. However, bacteria are not found only in the blood, and it is necessary to determine what preparation gives the highest concentration in the organs and in inflammatory processes. Experimental investigations indicate that injection of penicillin sodium G and dipenicillin (a mixture of penicillin sodium G and penicillin procaine G), which give a high concentration in the blood, can bring about over a short period a higher concentration in the inflammatory processes than that attained by injection of penicillin procaine G. Investigations in man show that this rule holds at least in the treatment of pulmonary diseases. Injection of 600,000 units of penicillin procaine G rarely gives measurable amounts of penicillin in the sputum, but 600,000 units of dipenicillin gives it in almost all cases, and penicillin sodium G is superior to both in this field. The penicillin preparation A, with special affinity for lung tissue, is particularly suitable for treatment of lung infections in which a high penicillin concentration is desired, also in chronic focal processes in the lungs. The development of this preparation paves the way for the production of other preparations with high affinity for the lungs. Chemotherapy must be guided not only by the localization and nature of the infection but also by determinations of resistance. When bacteria that are powerful producers of penicillinase destroy the effect of penicillin, an attempt must be made to eradicate them with other agents before penicillin is used again.

Dipenicillin in Acute Otitis Media.—Nielsen gives detailed tabulation of 650 bacteriologic examinations and about 200 determinations of resistance in 65 cases of acute otitis media treated with one daily dose of dipenicillin (a mixture of penicillin sodium G and penicillin procaine G). Patients under 7 years of age were given 200,000 units, those over 7 years, 400,000 units. Dipenicillin is considered preferable to preparations containing only penicillin procaine G, as the penicillin sodium content gives such a high concentration in the blood that the tissue concentration reaches a rather high level. The treatment was continued for one or two days after the discharge ceased and was always applied for at least six days. Of the bacteria of primary importance, hemolytic streptococci were established in 20 cases, pneumococci in 37 and Pfeiffer's bacilli in six. The otitis was due to secondary bacteria, Staphylococcus aureus and Streptococcus faecium, in only two cases. The average number of days before disappearance of the primary bacteria and of duration of the discharge was 3.2 and 5.4, respectively, in the cases with hemolytic streptococci, 2 and 5.3 in the cases with pneumococci and four and six in the cases with Pfeiffer's bacilli. There were no complications. Recurrence was seen in one case, reinfection in two. All hemolytic streptococci are sensitive to penicillin; pneumococci are about equally sensitive, and Pfeiffer's bacilli are most often resistant to penicillin but benign in the middle ear. Therefore, about 90 per cent of the cases of acute otitis are cured by penicillin. If six or seven days' penicillin treatment is without effect, the cause should be sought in bacteria resistant or weakly sensitive to penicillin and determinations of resistance made, or possibly streptomycin or aureomycin therapy should be tried.

Wiener klinische Wochenschrift, Vienna

62:417-432 (June 16) 1950

Thrombophlebitis Saltans and Phlebothrombosis. E. Eckl and F. Leibetseder.—p. 420.
*Acidity and Ulcer. Studies of Ulcerous Stomach with p_H Stomach Tube. H. Kreitner.—p. 422.
Hemorrhagic States. K. von Bujniewicz.—p. 427.

Acidity and Ulcer.—Kreitner determined the acidity of the gastric juice of 40 patients with duodenal ulcer and of 20 patients with gastric ulcer, by using a p_H stomach tube. This tube facilitated the continuous determination and control of the hydrogen ion concentration in the stomach of the patients and thus helped to produce a kinetic picture of the secretory power of the stomach, at least with respect to the secretion of free hydrochloric acid. Results revealed a primary disturbance of the gastric secretion. This disturbance does not consist in the production of a particularly active gastric juice, as some investigators have asserted nor in a specific hyperexcitability of the stomach, with excessive secretion of hydrochloric acid, as was considered by others. The disturbance consists rather in the continuous secretion of a gastric juice which by its p_H is close to the optimum of the pepsin effect. The stomach with an ulcerative lesion is regulated in conformity with a p_H value of around 2. This acidity level is maintained also during the interdigestive phase and during sleep. This regulation anomaly is the expression of a sympathetic nervous disturbance. The disturbance may have its origin in the intramural nervous terminal plexus of the stomach wall itself at one time and in the spinal cord, in the medulla oblongata, in the diencephalon or hypothalamus at another time.

Zeitschrift für Kinderheilkunde, Heidelberg

68:297-418 (July 24) 1950. **Partial Index**

Hemolytic Crises in Infants with Familial Icterus. E. Grundler.—p. 297.
*Penicillin Therapy in Scarlet Fever with Particular Consideration of Persistence of Infectivity and Immunity. H. Jebens.—p. 303.
Differential Diagnosis of Boeck's Sarcoid. K. Knuth.—p. 318.
Encephalomyocarditis and Its Differentiation from Poliomyelitis. F. Koch.—p. 328.
Diphtheria: Epidemiology, Particularly of the Toxic Form. H. Niggemeyer.—p. 368.
Brachymesophalangia of the Little Finger. F. Schmid and F. Junker.—p. 399.

Penicillin Therapy in Scarlet Fever.—Jebens collected observations on 161 scarlet fever patients; 80 of these were treated with penicillin, while 81 in alternate order were not. The dosage was adjusted to the duration of the fever. The administration of penicillin was usually continued for four to five days after the fever had subsided, but treatment was never discontinued before the end of the sixth day. Defervescence usually took place within two and one half days (in the control cases in five and one fourth days). The daily dose was usually 160,000 Oxford units, given in divided doses every three hours. The total dose was usually around 1,000,000 Oxford units. Bacteriologic tests revealed that all children treated with penicillin were free from hemolytic streptococci after three days. In 30, hemolytic streptococci reappeared before the patient was discharged; 18 of these 30 remained in the isolation ward for six weeks, and complications developed in 10 of them. The 30 caused a total of six new infections after their return home; four of these were caused by the 12 who had been discharged early and two by the 18 who had been in isolation for six weeks. Of the 50 children who showed no recurrence of hemolytic streptococci, seven remained in isolation for six weeks and 43 were discharged early. None of these 50 caused new infections in other persons, although there was a recurrence of hemolytic streptococci after discharge in eight of the 43. Tests investigating the formation of immune bodies between the twentieth and fortieth days disclosed that antibody formation was weaker in those in whom treatment was begun early and stronger in those who had had complications and in whom treatment was begun later.

BOOK NOTICES

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Studies in Lobotomy. Milton Greenblatt, M.D., Robert Arnot, M.D., and Harry C. Solomon, M.D., editors. Cloth. $10. Pp. 495, with illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

This book is a careful scientific evaluation of prefrontal lobotomy in an extensive series of cases at the Boston Psychopathic Hospital. The 500 patients were not only specifically selected on the basis of three to five years' hospitalization, but were also subjected to intensive clinical, anatomic, psychological and sociologic investigations preoperatively and postoperatively, by 30 different contributors comprising all the specialties related to neurology, neuropsychiatry and neurological surgery. The majority of the cases represented long-standing cases of schizophrenia with little probability of recovery by any other means of psychiatric treatment. It was concluded that through prefrontal lobotomy by the "open" method, approximately 40 per cent are benefited, in that they can live outside the hospital, and 20 per cent can be relatively self sufficient and self supporting. A high proportion of the remaining 60 per cent live a more satisfying and contented life in institutions.

A readable review of the recent literature in psychosurgery emphasizes the value of the "open" operation by the Lyerly-Poppen technic, because of the possibility of direct visualization and strict attention to the inferior or orbital frontal fibers which connect the frontal lobes with the thalamus and hypothalamus. With this technic, hemorrhage can be more carefully avoided and localization of the plane of section in relation to cerebral structures can be more accurate. The results in the affective psychoses (involutional and manic-depressive) have been the most encouraging. Lobotomy has also been successfully employed in selected cases of intractable pain, such as with metastatic tumors, phantom limb, tabes and facial neuralgia. Anatomic studies showed a surprising variability of lesions produced by leucotomy dependent on the plane of insertion of the leucotome, the extent of the incision and the adjacent associated hemorrhages and necroses.

The chapter on the technic and complications of the standard prefrontal lobotomy by Dr. Poppen will interest all neurosurgeons who have a justifiable aversion to the "blind" division of brain tissue. The mortality rate was 1 per cent. The postoperative behavior is discussed by Dr. Rose, who notes the temporary disturbance in control of the urinary bladder, the variable period of lethargy with short attention span and poverty of mental content and the excessive reactivity to painful stimuli applied to the skin. The follow-up studies were intensively and elaborately performed and were aimed at discovering which clinical syndromes were benefited and which were not; which individual signs and symptoms were benefited and which were not; what changes following lobotomy were observed in the patient's adjustment within himself, with his family, the community and his work; and what factors were of value in selecting cases which might benefit from frontal lobotomy. Unfortunately, neither preoperative nor postoperative pneumoencephalograms were studied to aid in the determinations of preoperative pathology, as distinguished from postoperative pathology and secondary degenerations. However, electroencephalograms and electrocortical stimulation studies were undertaken. The anatomic studies on the six patients who died from 11 to 235 days postoperatively emphasized local and distant neuronal loss in addition to the destruction anticipated, as a consequence of the planned resection of the cortex and the anatomic severance of the frontal white fibers. This was dependent not only on the site and method of section but also on the circumstances of hemorrhage as the section is carried through its planned extent, and the methods used to control hemorrhage. For example, severance by the method of suction tended to cause more damage from greater tissue loss and concomitant thromboses than the method of blunt section by a leucotome. Regardless of whatever external cerebral reference points the surgeon may utilize, the location and orientation of the incision in the cerebral substance are subject to variations in all three planes of space occupied by the frontal lobes, and, finally, the operator himself becomes the most variable factor determining the lateromesial extent, depth and width of the severance of cerebral tissue. Hence, the attempt to correlate the behavioral changes with specific topographic areas in the frontal lobe and anterior thalamus must also take into account concomitant damage to the cingulate gyrus, fibers of the anterior limb of the internal capsule and the subthalamic region and the island of Reil. These changes probably account for the great variations occurring clinically in postlobotomy patients. The relative values of topectomy, thalamotomy and cortical undercutting were also considered. On the whole, this book presents an unbiased and objective outlook on the assets and liabilities of lobotomy—the degree of benefits to be expected as well as the defects which may result.

Malignant Disease and Its Treatment by Radium. Volume III. By Sir Stanford Cade, K.B.E., C.B., F.R.C.S., Surgeon, Westminster Hospital, London. With a Foreword by Sir Ernest Rock Carling, F.R.C.P., F.R.C.S., F.F.R., Consulting Surgeon and Vice-President, Westminster Hospital, London. Second edition. Cloth. $12.50. Pp. 446, with 548 illustrations. The Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1950.

This is the third volume of a four volume series and deals with common neoplasms of the breast, thorax, abdomen, pelvis and the male and female external genitalia. It continues the authoritative presentation of the incidence, symptomatology and diagnosis of malignant disease characterizing the previous volumes. Although chiefly concerned with radium therapy, the book contains adequate discussions of the most appropriate methods of treatment. The illustrations are numerous, and some are excellent, but those of lung neoplasms are poorly reproduced. The radiotherapy described represents one English view, which may be at variance with the American trend toward more extensive employment of roentgen therapy. The volume should be useful to clinicians dealing with the diagnosis and treatment of malignant disease, regardless of the emphasis on radiation therapeutics.

Supervoltage Roentgentherapy. By Franz Buschke, M.D., Simeon T. Cantril, M.D., and Herbert M. Parker, M.Sc. Cloth. $10.50. Pp. 297, with 150 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, 1950.

This book is a valuable, detailed, well written and amply illustrated record of work done with an x-ray machine delivering roentgen rays with energies from 200 to 800 kv. The results in carcinoma of the esophagus, the maxillary sinus, the larynx, the urinary bladder, the breast and the cervix uteri, in malignant tumors of the pharynx and in pituitary adenoma are described. Of special interest are the favorable results in otherwise inaccessible esophageal tumors and the technical hints gathered from the work with the hypophysial tumors. Of interest also are the reasons given by the authors (page 200) for omitting postoperative radiation after a carefully done radical operation for carcinoma of the breast, and, finally, their general conclusion that promise of future advances lies not so much in exploring the region of higher voltages as in that close cooperation whereby the treatment is adapted as precisely as possible to the particular case. The book is recommended to the attention of both surgeons and roentgenologists.

Les maladies des coronaires: L'infarctus du myocarde, l'insuffisance coronarienne. Par Ch. Laubry, professeur de Clinique cardiologique à la Faculté de médecine de Paris, et P. Soulié, professeur agrégé à la Faculté de médecine de Paris. Second edition. Paper. 2400 francs. Pp. 618, with 299 illustrations. Masson & Cie, 120, Boulevard Saint-Germain, Paris 6e, 1950.

The first edition of this extensive monograph appeared during the German occupation in 1943, while France was cut off from England and America, and it is fitting that this edition should appear in the year of the First International Cardiological Congress, of which Professor Laubry was the distinguished president. The authors have now "had the full echo of the revolutions in electrocardiographic technic operating in America."

The subject matter is well covered. There are sections on the anatomy, physiology and pharmacology of normal coronary vessels. There is a chapter on etiology. That on the abnormalities of the electrocardiogram comprises 68 pages. The chapter concerned with the clinical description of acute coronary thrombosis is 114 pages long and is done with great clarity and order, although the value of such a detailed exposition is doubtful. Pathological anatomy and the physiological and pharmacodynamic changes induced by coronary disease are also discussed at length. The authors' views on therapy differ but little from those most current in the United States. However, they favor respiratory exercises in the treatment of the patient with angina and are not averse to such agents as baths and massage. In acute cardiac infarction they have had unhappy experience with bishydroxycoumarin (dicumarol®) and regard it as dangerous. They are inclined against the use of high concentrations of oxygen.

The book is profusely illustrated with reproductions of electrocardiograms, of diagrams showing their relation to cardiac lesions, of roentgenograms, photomicrograms and gross specimens. The reproductions of the first two are excellent, but some of those of roentgenograms and microscopic sections are only fair, while those of gross specimens leave much to be desired. The scope of the work is evident from the bibliography, which occupies 47 pages and gives over 1,000 titles, many of them by American authors. Far too detailed to be put into the hand of medical students, this extensive monograph will be of value to experts in the field as a critical compilation of the literature and as a record of the impact made by the more experimental American school on a great medical tradition which has remained for a long time in the descriptive phase.

Annual Review of Physiology. Victor E. Hall, Editor, Jefferson M. Crismon and Arthur C. Giese, Associate Editors. Volume XII. Cloth. $6. Pp. 609. Annual Reviews, Inc., and the American Physiological Society, Stanford, Calif., 1950.

Each of these annual reviews as it appears affords the medical reader a priceless opportunity to note the present status of some of the perennial problems of physiology and to discover new trends in research. The present volume lives up to its predecessors in these respects, and in addition contains a prefatory chapter by DuBois, Fifty Years of Physiology in America, which brings out interesting contrasts between 1900 and 1950 as regards the life of the physiological investigator. As examples of the perennial problems referred to might be mentioned the effects of cold, the existence of gastrin and the multifarious aspects of coagulation. The cause of hypothermic death is still in doubt (page 123), and the proof that gastrin exists is weak (page 209). The proposal of a new theory of coagulation (page 239) will be hailed with groans by medical students, whose minds in the past have certainly been overburdened with mistaken and impractical information on the subject. In view of the importance of hemorrhage and thrombosis, much interest attaches to recent work, referred to in this volume, on substances hastening and retarding coagulation.

In the field of respiration, the war prompted much excellent work on anoxia, decompression phenomena and oxygen intoxication. The physiological world has recovered from its phobia of resuscitation apparatus and its obsession with the virtues of carbon dioxide, two favorite notions of the late Yandell Henderson; it is now agreed that "mechanical respirators . . . improve the chances of survival" (page 191) and that the "addition of carbon dioxide was of no value" under certain conditions (ibid.). New trends are exemplified by the introduction of electrophrenic respiration (page 191); the development of cybernetics and the study of the wiring of the brain, whereby tinnitus, for instance, is revealed as a feedback phenomenon (page 422); continued disclosures of the treacherous nature of ionizing radiations (page 29); further probing into the submicroscopic structure of cells, and the demonstration of the particulate nature of such things as the "killer character" in paramecia (page 63).

The stimulating effect of practical industrial problems on research is exemplified impressively by recent discoveries regarding artificial insemination (page 537). Because of their exceptional potentialities, spermatozoa are very informative cells for experimentation. Large scale studies were necessitated by the fact that in a single year "2.5 million cows have been inseminated in the U. S. A. alone, and the enterprise which provides the semen and performs the inseminations is now a 12 million dollar industry employing more than 2,000 men and women full time." The resulting harvest of scientific information has been of the greatest practical and theoretical interest. This volume is recommended to the attention of everyone working in the medical sciences, particularly to authors anxious to make sure of the completeness of their information on a given subject.

Russian Impact on Art. By Mikhail Alpatov. Edited and with a Preface by Martin L. Wolf. Translated from the Russian by Ivy Litvinov. Cloth. $7.50. Pp. 352, with 32 plates. The Philosophical Library, Inc., 15 E. 40th St., New York 16, 1950.

The author of the book is a professor at Moscow University and a recognized expert on the history of art. The book was translated from Russian into English by Ivy Litvinov, the English-born and English-educated wife of the well known statesman. The title suggests that the author is about to discuss the subject of Russian art per se, without necessarily attempting to prove its superiority over the art of the rest of Europe. He makes an attempt to be objective but is eventually carried away by the temptation to demonstrate that the Russian art is somehow more "original" and more "profound" than the art of Western Europe because it is closer to the soil. This is a familiar theme which runs through all the recent works emanating from the U.S.S.R., whether their authors discuss discoveries in the field of science or accomplishments in the field of arts. This movement, sponsored by the authorities, is intended to replace "the slavish adoration" by the Russians of Western Europe, its culture and all it stands for, by insisting on the superiority of things Russian. In this it differs little, if at all, from the reactionary slavophile movement of the Tsarist regime.

The complaint that Western Europe, by which is meant Germany, France and England, failed to comprehend and to appraise the Russian art is of course not true. Thus, Nietzsche early spoke of Dostoevski in terms of highest praise. More books and interpretations of that author appeared in the German than in the Russian. Mérimée and Voguet introduced the Russian classics to the French public. The popularity of Tolstoy, Dostoevski and Turgenev with the French, the Germans, the English and the Americans requires no comment. Were the author to stress that the Russian prose fiction, as represented by the famous triad, was superior to that of the prose of Western Europe, no one would challenge his statement. But, in the fields of architecture, sculpture and painting, Russian art, when compared with that of the Italian Renaissance, the Flemish school of painting and the French painting of a later period, is totally insignificant. Most of the famous churches and palaces of the Tsarist Russia were designed by Italian architects. The famous Rastrelli, whom the author claims for a Russian, was born in Italy and had his artistic training in that country. Almost all Russia's talented architects, painters and sculptors studied in Italy and in France. The author fails to acknowledge the indebtedness of his country to Western Europe in the matter of fine arts. His partiality to things Russian is evident in such statements as that Lomonosov, like Leonardo da Vinci and Bacon, is one of the last "encyclopedic geniuses" of Europe, that Tchaikovsky is more profound that Wagner, that Chekhov's short stories are superior to those of de Maupassant, that Derzhavin was a great poet and that the essayist Chernyshevski understood life "more fully, deeply and broadly" than Hegel,

the great German philosopher and esthetician. Not satisfied with his own prejudices, the author invokes those of the older Russians. He quotes Tolstoy, who, after his conversion to Christianity, decided that French literature was immoral, the painter Kramskoy, who considered French painting "unprincipled," and Moussorgsky, who thought that the German symphonic music was too abstract and so dubbed it "mathematics." All these statements reflect nothing more than exaggerated nationalism, a malady which was well known and was vigorously resisted by the enlightened Russians of the type of Turgenev, Belinsky, Herzen and others.

There is no denying that Russia had and has its own art and its own artists and that like the art of any other country these works possess a certain originality which is distinctly theirs. The author attempts to cover entirely too vast a field. As a result, most of the chapters, with the exception of those dealing with the art of icon painting, are inadequate and superficial.

Preventive and Corrective Physical Education. By George T. Stafford, Ed.D., Professor of Physical Education, University of Illinois, Urbana, Ill. Second edition. Cloth. $3.75. Pp. 312, with 74 illustrations by Gene A. Logan. A. S. Barnes and Company, 101 Fifth Ave., New York 3, 1950.

This book for the physical education teacher stresses the importance of a schedule of corrective work in physical education consistent with the interests and capacities of those students unable to profit from the regular program of activities. In many schools too little is done to provide suitably graduated exercise for the handicapped child or the pupil with minor deviations from the normal. A program of therapeutic exercise to be administered under medical direction by the physical education teacher is recommended for this group. A practical plan for such a program includes (*a*) a broad activity program for students found by medical examination to be physiologically sound, (*b*) group corrective work for those with minor health problems, such as poor posture or weak feet, (*c*) individual corrective work on medical prescription for those with more serious disorders, and (*d*) supervised rest on medical advice for certain children during the physical education period.

The author emphasizes the need for developing this kind of program at the elementary school level when the best results may be expected. Since in the corrective aspects of physical education the teacher is actually a technician carrying out a medical prescription, a major portion of the text is devoted to developing a basic understanding of the varying conditions with which he may be expected to deal, a working terminology, the applicable exercises and the kinesiology involved. The volume should be useful as a textbook for prospective physical education teachers and as a guide for those in service. It is to be hoped that its emphasis on corrective exercise for a group of studcnts who have often been neglected will stimulate the development of more comprehensive physical education programs designed to meet the needs of all students.

The Cerebral Circulation in Health and Disease. By Carl F. Schmidt, A.B., M.D. Publication Number 68, American Lecture Series, A Monograph in American Lectures in Physiology. Edited by Robert F. Pitts, M.D., Ph.D., Professor of Physiology, Syracuse University School of Medicine, Syracuse, N. Y. Cloth. $2. Pp. 78, with 12 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, 1950.

This is a valuable addition to the physiological and clinical literature on cerebral circulation. After a brief description of the arterial and venous cerebral system, in which the results of cerebral angiography are emphasized, the physiology and pharmacology of cerebral circulation are discussed. These investigations are largely based on the measurement of the diameter of the pial vessels and temperature changes in various parts of the brain. Since definite species differences exist in the reactivity of the cerebral vessels to physiological factors and to drugs, the development by Kety and Schmidt of a quantitative method for the determination of cerebral circulation which is applicable to man was of greatest importance. The results obtained with this method in several clinical conditions are described. This little book is highly recommended to physiologists and clinicians. The bibliography is rather incomplete.

Recent Advances in Chemotherapy. Volume I. By G. M. Findlay, C.B.E., Sc.D., M.D. Third edition. Cloth. $7.50. Pp. 625. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1950.

When the first edition of this work was published 20 years ago, chemotherapy, with the exception of antisyphilitic therapy, was confined largely to tropical diseases. Since then, the discovery of the sulfonamides and the antibiotics has removed this subject from the realm of the esoteric to a place of major importance in therapeutics. As evidence of the increased scope of chemotherapy, it may be noted that the first edition of this work occupied a single volume; the present edition, when completed, will encompass four. This volume may be considered as a revision of earlier ones, since it is confined to the chemotherapy of protozoan diseases, the majority of which are tropical in origin. The diseases discussed are those due to insects (principally scabies), to helminthic infestations (amebiasis, leishmaniasis, trypanosomiasis) and to various protozoa (babesiasis, bartonellosis, toxoplasmosis, coccidiosis and trichomoniasis).

The pharmacology of the agents discussed is adequately reviewed, and the principles and details of therapy are presented. The only major criticism that might be leveled at this work concerns the lack of adequate discussion of the pathogenesis of the diseases for which therapy is recommended. A more complete outline of the life cycles of some of the organisms and a discussion of the routes of the infection and its natural course would aid the reader in understanding the principles and advantages of the various forms of therapy and in utilizing the text adequately. It is interesting to note that considerable attention is paid to veterinary chemotherapy, particularly in the chapter on helminthic infections, where an excellent discussion of the use of phenothiazine is given, and in the chapter on miscellaneous protozoal infestations, where such subjects as blackhead of turkeys and fowl coccidiosis are adequately treated. This volume should be of value to students of tropical medicine, those interested in therapeutics and veterinarians.

Aetios of Amida: The Gynaecology and Obstetrics of the VIth Century, A. D. Translated from the Latin edition of Cornarius, 1542, and fully annotated by James V. Ricci, A.B., M.D., Clinical Professor of Gynecology and Obstetrics, New York Medical College, New York. Cloth. $7. Pp. 215. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1950.

Dr. Ricci, in this scholarly translation of a sixth century encyclopedia of obstetrics and gynecology, has made available to his fellow practitioners a classic of great worth. In the accumulation of a knowledge which will qualify one today in the practice of medicine, too often the physician's gown hides abysmal ignorance of the roots of the healing art, and the centuries of groping which have culminated in the precision methods of 1950 could be no better emphasized than by perusing this small volume.

It must be reiterated that Aetios' work was encyclopedic; in the manner of a learned student, he condensed and edited the medical knowledge of the first five centuries of the Christian era. Dr. Ricci now places this at the reader's elbow for his moments of leisure. No one can fully appreciate the arduous task involved in this translation and the accompanying 96 pages of notes, definitions and other clarifying addenda, which are all so skilfully handled by a busy physician. There is scarcely a dull line in the book. The dissertations are numerous, and each the literary product of an "authority," displaying a knowledge which seems at times unbelievably keen and at the same time naïvely humorous. Excerpts from two topics are cited as typical: Archigenes and Leonides, prior to 200 A. D., gave an excellent description of the physical signs of cancer of the breast. "Further, it produces piercing pains radiating over a wide area, so that often it excites by sympathy a malignant inflammation of the axillary glands. . . . . Indeed ulcerated cancer erodes continuously and penetrates to the very depths, for it cannot remain stationary, and it discharges a sero-sanguineous matter worse than the poison of wild animals; detestable in amount and odor. . . . . Cancers arising in the breast invariably must be abandoned, . . . incurable, because they cannot be extirpated completely. . . . . But those tumors which develop on the top of the nipple are curable because the diseased

part can be easily excised." In treatment, Leonides states, "I make the patient lie down." Then progressive excision and cauterization was done, followed by dressings to promote suppuration. During healing, "The patient must abstain from wine, indigestible foods, and cold drinks." Before surgical intervention, "Of the more simple remedies let her drink the warm blood of a freshly killed goose or duck. . . . Of value also is a decoction of crayfish kept in asses' milk for five days." The latter, if used for 35 days, "will render cancer of the breast very amenable." These remedies one should "use with confidence and disregard the scoffers who but little understand the nature of the disease."

Amenorrhea, then as now, was no trivial symptom: "For the sake of conception, and because almost all women live with that purpose, monthly periods are necessary." The complications which might ensue varied from insanity to erysipelas. The common causes of this symptom are listed, but Rufus and Aphasia naïvely add that "singers and dancers naturally do not menstruate, because in these there is nothing left (for menstruation), since excessively violent exercise consumes it." The choice of remedies was as varied as it is today, but all others failing, these early endocrinologists found most successful a laxative of gummy thistle and parsley (estrogen withdrawal?).

This is not a desk reference volume for the busy practitioner; it contains not a single line of commercial value. Its appeal, however, should be universal to physicians of today who are directly, or only remotely, interested in the diseases of women. Structurally, although there are no illustrations, the book is excellent.

Einführung in die innere Medizin. Von Dr. Hans Julius Wolf, ausserplanmässiger Professor für innere Medizin an der Universität Göttingen. Fourth edition. Cloth. $6.50. Pp. 653, with 73 illustrations. Georg Thieme, Diemershaldenstrasse 47, Stuttgart O; Imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1949.

This textbook on internal medicine is not so brief as a quiz compend nor so voluminous as a fully detailed textbook, which is sometimes so detailed as to be confusing to medical students. The work is based on the author's experience as a teacher and practitioner and may, as he suggests, be useful in orienting medical students entering their clinical years and also as a quick reference to the essential facts for general practitioners. The fact that only eight years have elapsed between the first and fourth editions betokens the work's popularity. The book has a detailed table of contents covering 14 pages which, in general, is arranged by systems or organs. In addition, there are sections on the infections, contagious and noncontagious, on the animal parasites of man and on the common chemical poisons. The space devoted to the discussion of each disease varies with the author's estimation of its importance. In general, the clinical picture, physical observations, diagnosis, etiology, course and treatment are all briefly summarized. Where complications are common they are discussed, as is the pathological anatomy and physiology and the significance of technical aids in diagnosis where these are of sufficient importance. Although many of the discussions are brief, they are clear and readily grasped. Since discussion of conflicting theories and points of view is avoided, the presentation appears somewhat dogmatic, but this is doubtless unavoidable because of the nature of the work.

The book is attractively bound in cloth, clearly printed on good quality paper, and the illustrations, mainly in black and white, are satisfactory. The reproductions of roentgenograms are particularly good and well chosen. There are a few colored plates, mainly of blood smears, and some useful charts. There is a good index but no bibliography. The writer has a good knowledge of the literature and a clear style. The emphasis placed on different diseases naturally varies somewhat from that usually found in comparable American works, mainly because some diseases common in the western hemisphere are absent or rare in Europe. Not that exotic diseases are neglected, for there is a special section covering them. Certain things are omitted, such as some of the rarer conditions like Löffler's syndrome and Reiter's disease and marihuana addiction, but these omissions do not detract from the adequacy of the book as a whole.

Exercices chirurgicaux (de l'amphithéâtre à la salle d'opérations). Par J. Sarroste et R. Carillon. Avec la collaboration de Pesme, et al. Préface due Médecin-Général Paltre. Second edition. Paper. 2100 francs. Pp. 441, with 350 illustrations by Berkman, Souday and Bonde. Librairie Maloine, 27, Rue de L'Ecole-de-Médecine, Paris 6e, 1950.

This work on surgical technic is well organized. Throughout the book, for all subjects discussed, a brief introductory statement is followed by definitions, indications, anatomic background and surgical technic.

The book begins with a description of ligature of the arteries, after which, in the second chapter, exposure of the peripheral nerves is discussed. This is followed by a section written in collaboration with M. E. Sarlin on surgery of the lumbar sympathetic nerves. The third division of the book concerns surgery of the bones and articulations (amputations, disarticulations, resections and arthrodeses). This portion is a thorough, succinct evaluation of the principal operative procedures in this domain. In the fourth chapter, operations on the head, neck and spinal cord are described. Here also the original orderly scheme is followed. Regrettably, the material on surgical treatment of the spinal column is abbreviated. A discussion of ophthalmic surgery is added here. In the chapter on surgery of the thorax, perhaps it would have been well to describe the emergency approach to the heart, which is so important in cases of sudden cardiac arrest. The description of radical mastectomy is overcondensed. The subject of surgical therapy of the intra-abdominal organs (chapter 6) is introduced with an exposition of surgical procedures for hernia. It is heartening to note that the work of Fontan, a pioneer in gastrostomy and the first to construct a valve, is given due credit. Routine operations on the small and large intestines are well presented. The description of the operation for removal of the rectum in cases of malignant disease could be augmented advantageously with more modern concepts. This applies also to the chapter on surgery of the biliary tract. The closing chapter deals with surgery of the genitourinary apparatus. Here also the descriptions are curtailed. Hysterectomy is described, but other operations on the female genitalia are omitted. The illustrations are clear and, for the most part, diagrammatic. The work will serve its purpose for the student and general surgeon who read French; to them it can be recommended with the reservations noted.

Die Tuberkulose vom Standpunkt des Internisten. Von Prof. Dr. Hans Kutschera-Aichbergen. Paper. $5.70. Pp. 308, with 43 illustrations. Springer-Verlag, Mölkerbastei 5, Wien 1, 1949.

Dr. Kutschera is professor of medicine at the University of Graz, Austria. This book is written primarily for physicians interested in the medical treatment of tuberculosis. It should serve for better training of young physicians in recognition of early cases of tuberculosis in which medical treatment still could be quite successful. Dr. Kutschera has found this training considerably deficient, as is obvious from various histories he cites, in which the correct diagnosis of tuberculosis was made only after the patients had been treated for a prolonged time on the basis of a mistaken diagnosis.

To the American reader it is of particular interest to realize the tremendous increase of tuberculosis in certain parts of central Europe, where the mortality figures increased from four to six times over those in the year preceding the outbreak of the second world war. The death rate is about 500,000 per year among the population of approximately 500,000,000 people in Europe. Dr. Kutschera draws from a broad experience with tuberculosis. In the impoverished countries of central Europe, it is necessary to use comparatively inexpensive methods for routine checking of the large populations. Roentgenography as a diagnostic means is used only if other observations, such as diminished vital capacity, are suggestive of pulmonary disease. Obviously, spirometry is used rather extensively in the hospitals of central Europe.

Of particular interest is the experience of the author with active immunization of otherwise almost hopeless cases of advanced pulmonary tuberculosis with virulent tubercle bacilli, producing superinfections in the skin. These experiments, which in a considerable number of patients were unbelievably successful, are based on the observation that incidentally produced infections of the skin (following tracheotomy in tuberculous patients) have a beneficial effect on the course of severe open

cases of pulmonary tuberculosis. Dr. Kutschera believes that such active infections, either by the same strain recovered from the patient or by a virulent strain from another tuberculous patient, have a curative effect by increasing the resistance of the host against the pulmonary disease. In general, the factor of resistance is much more conspicuously stressed throughout the book than infection, per se.

One might disagree with some decidedly dogmatic statements, by no means proved by sufficiently clarified morphological data; for instance: cases of pulmonary tuberculosis are classified according to two large groups, one as beginning with a unicentral lesion (in particular the various forms of primary filtration, Assmann) the other the multicentric beginning types. While the former is admittedly the effect of an exogenous new infection (and with this statement certainly numerous pathologists will agree), the multicentric form is supposed to be based on hematogenous invasion of both lungs from a still active focus, usually in the lymph nodes of the primary complex. The later pictures in both types are admittedly very similar to each other, especially in the progressive form. There is no sufficient evidence to date to support the view that the bilateral phthisis, progressing from the apical to the basal areas, is the effect of a secondary hematogenous spread to the lungs.

There is no question that this book may be of some value to the practicing physician in central Europe who is confronted with tuberculosis in its very early stages. Because of the book's local character it will be of interest only to the reader who is interested in the problem of tuberculosis from a global standpoint.

A Histology of the Body Tissues with a Consideration of Their Functions. By Margaret Gillison, Lecturer in Physiology at the I. M. Marsh College of Physical Education, Liverpool. Foreword by R. C. Garry, D.Sc., M.B., Ch.B., Regius Professor of Physiology, University of Glasgow. Cloth. $3.50. Pp. 220, with 103 illustrations. The Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1950.

This small textbook is written primarily for students of physical therapy and physical education and is meant to bridge the gap between anatomy and physiology. The descriptions of cells and tissues are lucid and easy to follow. The text is well illustrated by drawings which are simplified representations of microscopic sections. The vocabulary is extensive for an elementary text, and some terms are used rather loosely; for example, the author refers to the lining of Bowman's capsule as squamous epithelium.

The scope of the book is limited to an introductory chapter on the anatomy and physiology of a typical animal cell, with the amoeba as prototype, followed by chapters on the preparation of tissues, surface and lining tissues, connective and supporting tissues, cartilage and bone, blood and tissue fluids, muscle tissue and the nerve tissues. The introductory chapter is particularly good, as is the brief description of the preparation of tissues for microscopic study. The histological structure of organs is not included, except briefly in connection with the topics of the various chapters. In general, this is an excellent elementary textbook of histology. This book should be of value to students of physical therapy and physical education and to nurses. It should also be of value as an introduction to animal biology.

The Cytology and Life-History of Bacteria. By K. A. Bisset, Ph.D., Lecturer in Bacteriology, University of Birmingham, Birmingham. Cloth. $3.50. Pp. 136, with 43 illustrations. The Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1950.

This volume is a polemic against confining the study of bacteria solely to their physiological properties. The author considers them as living cells with the same structure and functions as other living cells. The limitations of past and present technics for the study of bacterial morphology are emphasized, and new methods are proposed. These include special staining technics for the demnostration of the various components of the bacterium, including nuclei and chromosomes. Also included are discussions of reproduction, sexuality, life cycles and genetics of bacteria. A minimum of proof of structure is established by the author; the problems remain unsolved. The book will be of interest only to microbiologists, geneticists and cytologists who are interested in cell structure and cell metabolism.

One Hundred Years of Indiana Medicine, 1849-1949. Published in Connection with the Centennial of the Indiana State Medical Association. Dorothy Ritter Russo, Editor-in-Chief. Prepared under the Direction of Charles N. Combs, M.D., and Edgar F. Kiser, M.D. Cloth. $4. Pp. 195, with illustrations. Indiana State Medical Association, 1021 Hume Mansur Building, Indianapolis 4, 1949.

This book is a review of 100 years of medical history in Indiana. Dr. C. N. Combs has accumulated material relating to the Indiana State Medical Association over a period of many, many years, and it must have been no small chore to sift it and finally arrive at a choice for inclusion in the book. The book is, of course, concerned with only one of the 48 states, but it should be of interest to doctors elsewhere, because pioneer times in Indiana typified much of that era in the entire Northwest Territory. From this point of view, the editors and other contributors have done exceedingly well with special phases of Indiana medicine and have produced a literary diorama of medical effort and progress in which they and other American physicians may take pride.

Some of the saltier portions in the section by Dr. Combs on the history of the Indiana State Medical Association might be quoted here:

1849. Also at this meeting they grappled with problems that, for the sake of science, we all regret they left undetermined: Resolved, That a Committee be appointed by the president to collect, in a systematized form, facts on the duration of pregnancy, and the causes which influence sex.

1862. Many state medical societies and even the American Medical Association missed one or more meetings during the Civil War, but Indiana did not fail to keep going. However, the usual May meeting was postponed until November and the attendance was slight. The membership was 300 and the annual expense was $93.00.

1867. A member was expelled for reading a paper on the progress of medical science when it was discovered to be an exact copy of an address delivered by a New York doctor at the New York State Society meeting the year before.

1877. Governor Thomas Hendricks (granduncle of our Tom) was thanked for being the first governor of Indiana to recommend a State Board of Health.

1880. Doctor Beck of Fort Wayne wanted to levy $1.10 per member to be paid to the family of a deceased member as doctors were notoriously poor.

1888. The 38th annual session will go down in the annals as the most memorable—certainly to that date. For the banquet, James Whitcomb Riley, our own Hoosier poet, wrote the original and apropos verses to each toast, and he responded with the premier reading of his now celebrated poem, "Doc Sifers." Bill Nye could not be there but sent a characteristic telegram, "Sorry I cannot be there. May you and your associates continue to take life easily as heretofore." Concluding the seventeen speeches the meeting "adjourned at three o'clock and four minutes, a. m."

1890. A whole county society was expelled because the majority of the members were physiomedicals and eclectics.

1893. There was a case reported of suppurative appendicitis cured by calomel and sweet oil. (It was evident that the abscess ruptured into the bowel thus effecting the cure.)

1898. . . . This year was notable because it gave the meeting a new scientific feature, the pathological exhibit of 175 specimens.

1901. A paper on spinal anesthesia lies unheralded and unsung as far as the bibliographer is concerned for its title is "Medullary Narcosis."

1919. A motion was carried to exclude from membership any physician who sought by changing his location to profit by the patriotism of physicians who went to war.

Marriage and Family Relationships. By Robert Gelb Foster. Revised edition. Cloth. $2.75. Pp. 316. The Macmillan Company, 60 Fifth Ave., New York 11, 1950.

This book was first published in 1944. It is a comprehensive presentation of problems arising both in marriage and family relations based on the theory advanced in many of the writings of the Menninger group, which stresses the choice facing human beings between love and hate. "Love leads to constructive acts and accomplishments, whereas hate leads to self—and world—destruction." The usual procedure in books of this kind is followed, proceeding from self analysis and self understanding to a discussion of basic needs and human behavior and the understanding of "friendliness patterns" in relation to marriage. From this logically follows mate selection, looking forward to marriage and the evolution of a satisfactory family life, including the introductory year of marriage, sex, money, home, children and relatives by marriage. The family in relation to society as well as other sociologic and human relations are dealt with. There are extensive references for supplementary reading. The book is given a textbook flavor by questions and exercises related to the chapters. It can be recommended for use at the college level and as supplementary material in the hands of discriminating leaders for group discussions in the advanced teens.

Experiments in Social Process: A Symposium on Social Psychology. Edited by James Grier Miller, Professor of Psychology, Department of Psychology and Division of Psychiatry of the Department of Medicine, University of Chicago. Cloth. $3. Pp. 205, with 7 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18, 1950.

To consider current social problems, the technics being developed or refined for their solution and the results of recent experimentation and study in the field of social psychology, experts in various branches of the field were invited to participate in a symposium at the University of Chicago in November 1947. The reports of participants, describing representative samples of recent work and their anticipated application to broader social problems, are presented in the first eight chapters of this book. In the ninth chapter all members of the symposium are joined by a nuclear physicist for a round table discussion of the ways in which the physical and social scientists can best cooperate to remove the threat of mass destruction arising from the development of atomic energy. A relatively young science, social psychology is able to report progress and look forward to even greater advances largely because of improved methodology. The sharpening of such technics as the public opinion survey, field observation and experiment, the laboratory experiment and clinical study, is described and illustrated. The importance of a scientific methodology is emphasized by all the contributors. The exposition and evaluation of this aspect of research in social psychology is one of the chief contributions of the book.

In most instances the writers try to relate or illustrate technic and theory with empirical data from controlled experimentation. Specific experiments with their results are described. There is some tendency, perhaps because of limited space, to fall back on generalizations which seem either premature or unsupported by the discussion and which clutter more than clarify. Most of the contributors, however, seem to be aware of the present shortage and great need of experimental data in a subject which historically has consisted largely of theorizing. Though not highly technical, the book offers considerable insight into the present achievements and future ambitions of the social scientists. The full array of problems to which present technics are applicable has been by no means fully explored. Neither has much experimental data been collected or systematized. But the contributors seem to share the feeling that, although social psychology is in its infancy as a science, it is making a start at forging the solutions to the interpersonal and international problems that beset society.

Certain chapters are exceptionally well written. The subject matter is often entertaining as well as informative. The book, as might be expected from its composition, is not, however, of uniform quality. The material presented is not always new, penetrating or significant. But because of the wide diversity of topics dealt with under one cover, the physician will get a valuable over-all view of this field. The book will add to his awareness of a new sphere of progress which will more and more affect him both as a physician and a citizen.

Old Age: Some Practical Points in Geriatrics and Gerontology. By Trevor H. Howell, M.R.C.P., Lecturer in Problems of Old Age, St. Bartholomew's Hospital, London. Second edition. Boards. Pp. 108, with 9 illustrations. H. K. Lewis & Co., Ltd., 136 Gower St., London W.C.1, 1950.

In this small volume, Trevor H. Howell has condensed his long experience with clinical problems among older persons and the chronic sick into a readable, useful book. The chapters on Approach to Old Age, Geriatric Rehabilitation, Diseases in Old Age and The A.B.C. of Geriatrics are especially noteworthy for their discussion of the general problems of geriatric medicine. This is not an exhaustive, detailed textbook, but it nevertheless contains many interesting observations on diagnosis, treatment and rehabilitation in respect to diseases commonest among older patients. As the author well says, "Geriatrics is more a state of mind than a branch of medicine or a mode of treatment. It is a reaction against the belief that after sixty a patient is too old to be medically interesting or therapeutically rewarding." The reading of this book will be found rewarding by all physicians who see older patients.

Lippincott's Quick Reference Book for Nurses. By Helen Young, R.N. Editorial Board: Department of Nursing, Faculty of Medicine, Columbia University, Presbyterian Hospital School of Nursing, New York, Mary Elizabeth Allanach, A.M., R.N., Assistant Professor of Nursing, and others. Sixth edition. Cloth. $3. Pp. 626. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1950.

This book contains up-to-date information. Many changes have been made in this edition, particularly in the section on pharmacology. A table of less commonly encountered diseases has been added, and recent developments in diet therapy have been included. The content is divided into several sections and provides general information on pharmacology, nursing technics, medical and surgical nursing, obstetric nursing and diet therapy. The appendix includes a glossary, tables of measurement, popular and official names of medicinal preparations and diagrams of pressure points showing relation to arteries and bones. This is a handy little volume; if somewhat thinner, it could be called pocket size. The format is pleasing; it is easy to read, and the type and paper are excellent.

Simmonds' Disease: Extreme Insufficiency of the Adenohypophysis. By R. F. Farquharson, M.B., F.R.C.P., Professor of Medicine and Head of the Department, University of Toronto, Toronto. Publication Number 34, American Lecture Series, A Monograph in American Lectures in Endocrinology. Edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago. Cloth. $2. Pp. 93, with 5 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, 1950.

This is a valuable monograph. The pathogenesis and pathology are completely and clearly developed. The far reaching effects of this condition on the other endocrine glands and the viscera are discussed in some detail. The clinical course of the disease is thoroughly reviewed. Therapy is given only general discussion, with suggestions for substitution therapy for hypogonadism, hypoadrenalism and hypothyroidism. The advent of potent tropic hormones, such as the adrenocorticotropic and thyrotropic hormones, and their influence on therapy is not mentioned.

Aids to Public Health. By Llywelyn Roberts, M.D., M.R.C.P., D.P.H., Medical Officer of Health, City of Sheffield. Sixth edition. Cloth. $2. Pp. 304. Bailliere, Tindall & Cox, 7-8 Henrietta St., Covent Garden, London, W.C.2 [The Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2], 1950.

This book on public health briefly and superficially summarizes modern British public health practices. As a quick review of the general subject it will be useful to public health personnel, although in some respects the information and recommendations are not in accord with latest advances. The section on infectious diseases particularly needs revision, since some of the recommendations made are not accepted by most modern authorities.

Your Hair: Its Health, Beauty and Growth. By Herman Goodman, B.S., M.D. Cloth. $2.95. Pp. 287, with illustrations. Emerson Books, Inc., 251 W. 19th St., New York 11, 1950.

This edition is merely a reprinting of a book issued several years ago. In popular style, the author ranges from a discussion of the cause and treatment of various forms of alopecia to the etiological concepts and therapy of hypertrichosis. In general, the subject matter is presented in a simple manner and provides a review of facts old and new on the subject of hair and hair growth.

Einführung in die pathologische Physiologie. Von Professor Dr. F. Grosse-Brockhoff, Oberarzt an der medizinischen Universitäts-Klinik Bonn. Cloth. 39.60 marks. Pp. 645, with 306 illustrations. Springer-Verlag, Reichpietschufer 20, Berlin W. 35, 1950.

As the title indicates, this book is written for medical students rather than for the physician in general practice. The author aims to bring the medical student face to face with the unknowns in the physiology of disease. The numerous illustrations are excellent. The author displays good critical judgment, but in many instances he fails to list (even briefly) the proven facts on which he bases his conclusions, a method essential in elementary medical education.

QUERIES AND MINOR NOTES

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ANGINA IN WINTER

To the Editor:—A patient with severe angina largely in winter, or in cold, damp and windy weather, wants to know whether there is a place in this country with weather or climate near ideal for him, an all-year dry, warm and sunny weather, not windy and located at sea level or moderately above it. I think the Pacific Islands might offer such a climate. Would you agree with this?

Leopold J. Schwarz, M.D., Wildwood, N. J.

ANSWER.—The combination of ideal climatic conditions mentioned above is practically unobtainable. The dry, sunny areas in the southwest of this country tend to be at moderate altitudes and often windy. There are doubtless favorable places in Southern Arizona and Southern California where the altitude is not great and where there is not much wind. Southern Florida is often helpful to patients with angina pectoris in the winter, but the weather there can also be humid and windy. Possibly some desert areas of Sahara might be suitable, although there again wind storms and remoteness from civilization could be deterrents. The Pacific Islands, including Hawaii, would probably not be suitable. While the climate is equable, the humidity is relatively high and there are winds such as the trade winds of Hawaii. The conditions required may perhaps be met in the Southwest in the region around Yuma, Ariz. (altitude 140 ft.). Other areas of this type include Needles, Calif. (altitude 491 ft.), and Phoenix, Ariz. (altitude 1,100 ft.). They are, however, hot in summer.

BASKETBALL FOLLOWING RHEUMATIC FEVER

To the Editor:—Should a high school boy who has had rheumatic fever be allowed to play basketball three months after an attack, provided there is no evidence of cardiac disease? The rheumatic fever involved the right knee joint and one metacarpophalangeal joint of the left hand. There was only moderate fever during the three weeks' course of the disease.

M.D., Minnesota.

ANSWER.—One of the most difficult problems in the management of rheumatic fever is to determine when the active process is at an end and how rapidly the patient should resume normal life. Even if there is no clinical or laboratory evidence of cardiac involvement, the majority of students of rheumatic fever would advocate at least two or three months of bed rest following the onset of an acute rheumatic episode. After this period, the return to full activity should be gradual. It would scarcely seem wise to permit strenuous exercise within three months of the onset of rheumatic fever.

FLUORIDE POISONING

To the Editor:—In the process of reducing aluminum ore, certain fluorine derivatives are given off which are harmful when ingested. In areas where reduction plants are located, these derivatives settle on vegetation. When the vegetation is eaten by cattle, deleterious effects on their teeth are noted. Kindly inform me where I can get literature on this subject, particularly as to the effect of these products on the human body.

M.D., New York.

ANSWER.—Exposure that might lead to fluorine or fluoride poisoning is by no means limited to the smelting of ores, nor is ingestion the only avenue of possible damage. The lowest form of chronic poisoning, mottled enamel of teeth, is inaugurated only in children and is due to the imbibition of waters with a natural high content of fluorides. In industry extensive exposure results from the application of fluorides in the founding of aluminum. Some poisoning has arisen from the accidental ingestion of fluorides in pesticides. The chronic form of fluoride poisoning characterized by dense deposits in bones and tendons as revealed in roentgenograms is not known to have occurred in the United States but has been described in European countries. In a few areas, damage, chiefly to cattle, has followed volcanic eruptions. A voluminous literature descriptive of all features of fluorine and fluoride poisoning has accumulated. The newest comprehensive publication with an extensive bibliography is by J. Larner (Toxicological and Metabolic Effects of Fluorine-Containg Compounds, *Industr. Med.* **19**:535 [Nov.] 1950).

FREQUENT URINATION

To the Editor:—A 77 year old man with carcinoma of the liver of about five months' duration is having frequency of urination, every one and a half hour to three hours, day and night. The urine, kidneys, ureters and prostate are normal. There are no signs of pressure on the urinary tract. A urologist and about 15 other physicians have seen the patient, but none have given any suggestion as to etiology or treatment. I will be grateful if you can advise in any way. Pains in the abdomen began after a virus infection, diagnosed as hepatitis, last March. In April the diagnosis of carcinoma was made. Later that month he was treated with roentgen rays and sodium pteroylriglutamate. In about four days the severe pains in the liver disappeared.

M.D., New Mexico.

ANSWER.—Frequent urination in the presence of normal urine may have a variety of causes. The data supplied do not permit a categorical diagnosis. Frequent urination may be of two types: first, frequency which implies the passage of small amounts of urine at short intervals with a normal 24 hour urine output; second, polyuria, which implies the passage of normal amounts of urine at short intervals with an abnormally large 24 hour urine output. Repeatedly normal urine specimens must be obtained over a period of weeks before the urine can be safely called normal. In addition, tests of the concentrating power of the kidneys must be done if casual specimens do not occasionally show a specific gravity of 1.020 or more. If there is frequency, the cause probably lies within the lower urinary tract, although neurological disease, psychogenic disturbance and disease in adjacent viscera involving the lower urinary tract must be considered. If there is polyuria, primary renal disease (e. g., renal arteriosclerosis), endocrine disease (e. g., diabetes insipidus, Addison's disease) and psychogenic factors should be considered. It is impossible to discuss here the differential diagnosis completely, but distinction between frequency and polyuria, assurance of the normality of the urine and observation of the renal concentrating power should narrow the field of diagnostic possibilities and indicate the direction for further study.

ESTROGENS FOR CANCER OF BREAST

To the Editor:—A woman aged 40, with two children, had a radical right mastectomy for breast cancer, without metastasis at that time, in January 1948. In 1949 widely diffused bone metastasis developed, and in February 1950 she had a hysterectomy and ovariectomy, to combat the bone metastasis, which had been poorly controlled with roentgen rays and testosterone in massive dose. Great improvement followed the second operation, the bone metastasis showing remarkable recalcification. The patient regained the lost weight and was energetic. The many hard nodules under the scalp shrank and disappeared. However, two subcutaneous nodules on the right hemithorax, below the amputated breast, and a nodule on the right plantar region seem not to be influenced, even by roentgen therapy. Another nodule on the right hemithorax last year was removed surgically and found to be a metastatic one. Testosterone, had to be discontinued because allergy developed. The patient is suffering from menopausal disturbances, chiefly profuse perspiration. I have tried again small doses of testosterone by mouth, with the same intolerance by the patient. She has shown the same intolerance toward progesterone, characterized mostly by temporary reactivation of bone pains. Is it hazardous to use small or large doses of estrogen to control menopause disturbances and, possibly, also influence the subcutaneous nodules? Can I use vitamin E? I will appreciate any help you may extend me.

A. A. Bernardo, M.D., Philadelphia.

ANSWER.—The use of estrogen hormones to combat extensive carcinoma of the breast is reserved for women over 60 years of age. However, inasmuch as this patient has been completely castrated for 18 months, it may be that the estrogen in large doses would be of benefit. Certainly, when all other therapy has failed, it should be tried. There is no contraindication to the use of vitamin E, although its value in this situation is to be questioned. The recurrent nodules can be treated with radium application, radon implants or roentgen rays administered by means of a cone, so that the rays could be focused directly to the affected area. There are no radioactive elements known at this time which would be of any greater benefit. Further metastasis is to be expected, as temporary response to endocrine therapy will eventually be followed by recurrence and further spread of the disease, which finally results in death.

EPIDEMIC OF CONJUNCTIVITIS

To the Editor:—There has been an epidemic of a peculiar type of conjunctivitis at one of our junior high schools. Cultures from 13 of 26 eyes were positive for Actinomyces nocardia. A control group of cultures was made from 13 students in that school who had not had this conjunctivitis and 13 students from another school, where there was no epidemic. These were all negative. The three ophthalmologists who have been consulted feel that the symptoms in no way correspond with those described as typical of Actinomyces. There is rarely pus in these eyes; they are moderately red; some have extremely fine granulations along the margin of the lids; there is usually itching, a tight, uncomfortable feeling and sometimes pain. Symptoms respond to medication with sulfonamides but tend to recur if the drops are not used long enough. The epidemic has been in progress for 10 weeks in spite of the fact that pupils with the infection have been excluded, except at first, when they were allowed to return to school if they were receiving medication. About 10 days before the epidemic started some shavings were placed in a pit for jumping purposes. Similar shavings were used simultaneously in two other schools, where there has been no epidemic. The same species of A. nocardia was isolated at two different times from the shavings at this school.

Elizabeth H. Laidlaw, M.D., Tucson, Ariz.

ANSWER.—Actinomyces nocardia is an exceedingly uncommon but definite cause of several chronic types of keratoconjunctivitis. A variety of clinical pictures have been reported: superficial punctate keratitis, yellowish nodules on the conjunctiva, adherent yellowish white membrane on the palpebral conjunctiva, raised nodules on the surface of the cornea and sclera, chronic conjunctivitis, mucopurulent conjunctivitis, folliculosis with adenitis and bullous keratitis with granulation tissue. Probably the only characteristic ocular involvement caused by Actinomyces is chronic conjunctivitis, almost invariably unilateral, that follows concretions in the lacrymal canaliculi. Removal of the concretions by curettage, mechanical expression and irrigation is followed by complete and rapid recovery.

A. nocardia is usually considered to be a nonpathogenic soil bacterium. Many types of Actinomyces are present in the soil, and it is easily possible for some organisms to enter the eye. The pathogenicity of the entire group of organisms is low, and ordinarily only a small percentage of the population is susceptible to this type of infection. Once the infection is established, treatment is frequently unsuccessful.

If the infection has continued in this group, the following regimen is suggested. The cause must be definitely confirmed, as A. nocardia is usually of such low pathogenicity as to be a highly unlikely causative factor in conjunctivitis involving such a large group. Smears and scrapings should be made of the conjunctiva and eyelid margins. Smears should be stained by Gram's method and examined for fungi and bacteria. Scrapings should be stained by a blood stain such as Wright's or Giemsa's. The scrapings should be examined for bacteria and fungi in the epithelium, for the inclusion bodies of trachoma and inclusion conjunctivitis and the eosinophils of allergic conjunctivitis. Material from both the conjunctiva and the lid margin should be cultured under both aerobic and anaerobic conditions with several different types of mediums. Animal inoculations with A. nocardia are usually not successful.

If A. nocardia is the likeliest cause, the first step in the treatment should be irrigation of the lacrymal sac through both the superior and inferior puncta and complete assurance that there is no source of infection in the lacrymal apparatus. Drugs of choice are penicillin G and sulfadiazine administered systemically in full doses. Locally a 5 per cent sulfadiazine ointment may be of value. One should keep the lid margins free of epithelial debris by cleaning with cotton-tipped applicators.

ANTIBIOTICS EXCRETED IN BREAST MILK

To the Editor:—A mother asks whether there is any objection to her taking aureomycin or other antibiotics while nursing a baby. This mother has relapses of undulant fever, and aureomycin has proved of benefit.

Eugene T. Brunson, M.D., Ganges, Mich.

ANSWER.—Penicillin is excreted in the breast milk and in therapeutic amounts. Guilbeau and co-workers (Aureomycin in Obstetrics, *J. A. M. A.* 143: 520 [June 10] 1950) attempted to determine aureomycin levels in breast milk. In eight nursing women with a daily oral intake of 2 to 3 Gm. of aureomycin, it was found that the aureomycin level in the breast milk either equaled the level in maternal serum or was 12 to 25 per cent lower than in the serum. While such amounts of aureomycin might not harm the nursing infant, one wonders about the advisability of allowing a mother with chronic undulant fever to nurse her baby. If undulant fever can be transmitted through the milk of other mammals, is it not possible that it may be transmitted through human breast milk?

CHIGGERS

To the Editor:—I have had an attack of intense itching following trips to the country. The lesions were diagnosed as due to chiggers. Is there anything that can be done to prevent the bite of these mites? Kindly suggest a local application to relieve the itching and hasten involution of the lesions.

M.D., Pennsylvania.

ANSWER.—The secretions of the larvae of Trombicula cause dermatitis. The larvae themselves are found on the skin for only a day or two. Before the chiggers have dropped off the skin, treatment consists of a hot bath with soap and water, followed by the application of a 5 to 10 per cent sulfur ointment containing 1 per cent phenol. Accompanying pyogenic infections are treated by the use of appropriate antimicrobial agents. Mite infestations may be prevented by the use of repellents, the formula of one being as follows:

Dimethylphthalate	6 parts
Indalone (butyl mesityl oxi-oxalate)	2 parts
Rutgers 612 (2-ethylhexanediol-1,3)	2 parts

These are mixed mechanically. One-half teaspoonful is poured into the palm of the hand; the hands are rubbed together, and a thin layer of the mixture is applied to the face, neck, ears, hands and wrists (but not into the eyes or mouth). The application on the skin is effective for two to four hours. In addition to mites, it repels immature ticks, mosquitoes, gnats and flies. The application on garments is more lasting. It is sprayed or applied by hand and remains effective for a number of days. The impregnation of clothes with dimethylphthalate lasts still longer. They are immersed in a solution of 5 per cent dimethylphthalate and 2 per cent soap and dried. Clothes remain repellent for a month or two even though laundered.

SHOULDER PAIN FOLLOWING CORONARY ATTACK

To the Editor:—I am a victim of coronary heart disease, having had a posterior infarct in 1943. Since then I have experienced excruciating pain in the left shoulder girdle for six to 12 weeks at a time. At first the pain was ascribed to sequels of the coronary episode. In the last two years the fifth, sixth and seventh cervical vertebrae show definite arthritic changes. For some time I have taken 1/40 to 1/20 grain (1.5 to 3 mg.) of dihydromorphinone hydrochloride three times a day with relief. My heart does fairly well. I have some definite anginal attacks relieved by one or two 1/150 grain (0.40 mg.) glyceryl trinitrate tablets. The nitrites have never relieved the shoulder girdle pain. I am 61 years old and in apparently good physical condition. I have never had an acute failure episode. I am now advised that dihydromorphinone hydrochloride is strongly contraindicated. What are the contraindications to this drug in particular and narcotics in general in my case?

M.D., Kansas.

ANSWER.—If the shoulder pain began soon after the myocardial infarction, it is likely that it was then due to reflex dystrophy initiated by the heart lesion. This rheumatic complication, however, seldom lasts as a painful condition more than six to 12 months, after which stiffness and muscular atrophy at the shoulder and hand oftentimes may remain. If severe pain persists or has become worse through the seven years subsequent to the myocardial infarction and especially if roentgenographic evidence of arthritis exists in the cervical vertebrae, it is most likely that the left shoulder pain currently present is due to the spinal lesion. Severe shoulder pain resulting from disease in the cervical part of the spine usually is due to nerve root pressure and results from extensive degeneration of a cervical disk or to arthritic spurs encroaching on the foramen, or a combination of these abnormalities.

Accurate diagnosis is of first importance. When these conditions obtain, there may also be neck pain, limited cervical motion, crepitation and aggravation of shoulder pain by cervical motion. Roentgenograms will demonstrate the bone and intervertebral disk lesions, and oblique views of the cervical spine should show any encroachment on the foraminal space. Nerve root pressure often also causes paresthesia along the distribution of the nerve and sometimes reflex and/or pinpoint sensation changes.

If the condition is not too severe, usually the use of cervical traction properly applied, a Thomas collar, proper physical therapy and non-narcotic analgesia give good results. If severe localized pain occurs, injection of procaine hydrochloride at the nerve root or site of initiation of pain may be helpful although of only temporary value. If these measures fail and if pressure on a nerve root persists, sometimes it is necessary to relieve the pressure surgically. Continued use of narcotics for relief, rather than relieve the cause for the pain, is unwise. The warning against continued use of dihydromorphinone hydrochloride was undoubtedly given on this basis. The fact that the heart has continued well compensated indicates good healing of the infarction, so that it behooves the sufferer to find out the cause for the pain and correct it if possible. It is wise to have the expert help of a specialist capable in this field; consultation with orthopedist, rheumatologist, neurosurgeon and internist is advised.

SWELLING OF THE CHEEK AND PREMENSTRUAL TENSION

To the Editor:—A 22 year old woman complains of unilateral swelling of the cheek eight to 10 days after each menses. The condition has persisted about eight months. The swelling is nonpainful, lasts three days and starts in the region of the malar eminence. During the course of the three days the swelling spreads down over the cheek proper and finally disappears. There is no associated discoloration of the face or other signs of local pathology. Two years ago she underwent a Baldy-Webster suspension, tubal ligation and appendectomy. Four years ago the patient had a normal full term pregnancy, and to date her periods have been normal. Results of physical examination and routine laboratory tests were essentially negative. The patient was placed on a salt-free diet, 10 grains (0.6 Gm.) of ammonium chloride three times a day and 20,000 units of estrogens every three days for five doses. She was not seen until the swelling recurred, three days prior to her next period. The swelling had completely abated by the first day of the menses. She received the same treatment the following month, and, while the swelling recurred again just prior to the period, it lasted only two days and was not as pronounced. During the third month under observation she was given 10 mg. of testosterone propionate twice daily for the first 15 days of the cycle. The patient had no swelling during that cycle. What would be the most likely diagnosis?

M.D., Ohio.

ANSWER.—The condition is part of the syndrome known as premenstrual tension. In this syndrome all types of bizzare swellings may occur in different parts of the body. The etiology of premenstrual tension has been stated to be an increased amount of estrogen in the blood before the onset of menstruation or an insufficient amount of progesterone secretion at this time. Greenhill and Freed (*Endocrinology* 26:529 [March] 1940) postulated a single mechanism for the development of the variety of changes which occur. Premenstrual distress is, according to this hypothesis, the result of sodium ion retention by the different tissues of the body under the influence of the ovarian steroids. This retention of sodium ion is associated with an increase in extracellular fluid in the tissues, which may be microscopic in amount or may develop into gross edema. Under this theory, the neurological symptoms result from edema of the nervous system, probably the brain, the nausea and bloating of the abdomen result from edema of the gut and the other symptoms arise from the specific organs affected.

On the basis of this hypothesis one could administer ammonium chloride by mouth, a salt frequently used for removal of edema fluid in cardiac and renal disturbances, although not in the usual diuretic doses. The patient is advised to refrain from adding table salt to food during the last two weeks of the menstrual cycle. During this time she is given 0.6 Gm. of ammonium chloride three times a day.

DIABETIC SUGAR FREE WHEN TAKING ALCOHOL

To the Editor:—A man aged 30 has had diabetes mellitus for five years. His blood sugar varies between 120 and 174 mg. per 100 cc. He is taking 12 units of insulin (80 units per cubic centimeter) twice daily. Sugar in the urine may be 4 plus on one test and in 20 to 30 minutes may become negative, and vice versa. This man drinks moderately, four or five drinks per day, and when he does this the urine becomes negative for sugar. During the time he is taking alcohol he is very nervous. Why is he devoid of sugar at the time he is taking alcohol?

Frank J. Burian, M.D., Williamson, W. Va.

ANSWER.—It is likely that the patient has no sugar in the urine while taking alcohol because of the reduced intake of food during such times. It is not possible to outline treatment properly without knowing more about this man. Information is needed regarding his weight, height, occupation, food habits and level of intelligence. However, the following general principles are suggested: 1. The diet should be reasonably constant from day to day and should allow daily 150 to 200 Gm. of carbohydrate, at least 1 Gm. of protein per kilogram of body weight and fat to maintain body weight at a satisfactory level. 2. Protamine zinc insulin should be given daily before breakfast, with the dose gaged so that the fasting blood sugar is in general in the range of 120 to 140 mg. per 100 cc. If, having attained this, the urine just before the noon meal regularly contains sugar, a dose of regular or crystalline insulin should be given in the morning before breakfast by separate injection at the same time that the dose of protamine zinc insulin is given. The dose of clear insulin should be that amount which will in general allow the urine just before the noon meal to be sugar free or nearly so without causing insulin reactions in the forenoon. According to this plan, all insulin would be taken before breakfast. With a patient of this type, it would be best at the start to give the two varieties of insulin by separate injections, reserving until later the possibility of insulin mixtures. 3. Complete abstinence from alcohol should be insisted on.

LIQUID PETROLATUM IN PERITONEAL CAVITY

To the Editor:—A woman aged 45 has had a septic temperature for three months. Pelvic examination revealed a mass in the lower left abdominal quadrant which was thought to be a tubo-ovarian abscess. A laparotomy was performed and revealed a generalized nodular process throughout the entire peritoneal cavity with considerable thickening of the terminal ileum. Although no primary site was found, the thought was that this patient had a generalized inflammatory carcinomatosis of the peritoneal cavity. However, the pathologist did not find cancer; the report stated that the excised tissue was a generalized granulomatous reaction due to a foreign body. A report of a laparotomy done 17 years previously reveals that 14 ounces of liquid petrolatum were injected into the peritoneal cavity. What treatment has been instituted in patients who have had liquid petrolatum injected into the peritoneal cavity? There were no free droplets of oil in the peritoneal cavity.

M.D., Pennsylvania.

ANSWER.—There is no specific treatment for diffuse granulomas of the type which you have observed following the injection of liquid petrolatum into the peritoneal cavity, particularly since no free oil was found. It is barely possible that some of the bacterial enzymes which are being investigated at present might ultimately be useful in such conditions, but it is too early to advise their use in a patient such as the one described. The chief problem in this patient will probably be relief of pain and the treatment or prevention of intestinal obstruction resulting from adhesions.

CALCIUM

To the Editor:—When is it advisable to give calcium intramuscularly or intravenously? Is such administration advisable in gastrointestinal diseases, especially those associated with diarrhea? Is administration of calcium, either orally or parenterally, indicated in tuberculosis? Is calcium useful as a so-called general tonic? Is calcium advisable in cases of malnutrition due to illness or to a constantly inadequate diet?

William L. Nute, M.D., Talas, Kayseri, Turkey.

ANSWER.—There is widespread unwarranted use of calcium compounds given parenterally. This practice is promoted by certain manufacturers of calcium compounds prepared for this purpose. The indications for use of calcium compounds are well stated in "New and Nonofficial Remedies," as follows: "Calcium salts are specific in the treatment of hypocalcemic tetany. Vitamin D or parathyroid hormone may also be indicated according to the etiology involved. In severe tetany, parenteral administration, preferably intravenous, is indicated to bring symptoms under rapid control. Latent tetany or mild symptoms may be controlled by oral medication. When calcium is deficient, hydrochloric acid may increase its absorption."

There is little or no ground for parenteral administration of calcium salts in gastrointestinal diseases, whether or not associated with diarrhea. The administration of calcium in tuberculosis is empirical and is not supported by adequate evidence. There is no reason to believe that calcium serves any useful purpose as a "general tonic." The administration of calcium may be indicated in cases of true calcium deficiencies, such as occurred in large numbers in the middle European countries during and after World War I. In general a remedial diet is preferable to the administration of calcium compounds.

STAIN FOR PROSTATIC SMEARS

To the Editor:—Please describe the best method of fixing and staining prostatic smears.

W. F. Bell, M.D., Rutherford, Tenn.

ANSWER.—The following formula is recommended for the purpose of fixing and staining prostatic smears:

A. Prepare thin smears from prostatic secretions. Do not allow to dry.

B. Fixation: Place smears while still wet in ether alcohol 20 minutes to one-half hour (equal parts 50 per cent ether, and 95 per cent alcohol).

C. Stain:

1. Place slide for two minutes in Harris' hemotoxylin diluted with an equal part of distilled water.
2. Rinse in tap water.
3. Dip three times in a 0.5 per cent solution of hydrochloric acid.
4. Wash in running water for 10 minutes.
5. Place slide in saturated solution of lithium carbonate for one-half minute.
6. Wash slide in running water for 10 minutes.
7. Dip slide in dilute eosin.
8. Rinse in tap water.
9. Dehydrate in three changes of 95 per cent alcohol and two changes of absolute alcohol.
10. Clear in two changes of carbolxylene.
11. Place in xylene for five minutes. Mount in permount or Canada balsam.

SCHIZOPHRENIA

To the Editor:—Will the following conditions contribute to the development of schizophrenia? A woman in her late thirties is confined to an institution because of schizophrenia. Her mother was much disturbed and in almost a constant state of unrest during the prenatal state. An older sister of the mother, a religious fanatic, insisted that her mother should refuse sexual relations with her husband. The patient as a young child heard much of the intrigue to separate her parents and continued to hear this up to the time when her parents were separated and divorced, when the patient was about 12 years of age. This patient was in a state of bewilderment and dismay and kept asking over and over again why this had to be. When she overheard the scheming to ruin her father's business and bring him into disrepute, she became more bewildered. The patient was married in her twenties and has two boys and a daughter. She takes no interest in her home and asks her husband for a divorce.

M.D., Indiana.

ANSWER.—In answer to the question of the possibility of prenatal influences having to bear on the development of a schizophrenic reaction, there appears to be no scientific evidence to substantiate such a premise. A significant family factor is the personality make-up of the maternal sister, who is described as a religious fanatic who insisted that the patient's mother refuse sexual relations with her husband. One wonders about the mental state of this aunt, whether she too may not have had some aberrant psychiatric traits. The cause of schizophrenia is not known, but the incidence of this mental illness in disturbed or broken homes is much greater than it is in normal homes. While the parental quarreling which resulted in the patient's being confused emotionally may have served to precipitate the schizophrenic reaction, it probably was not the actual cause. The parents were separated and divorced when the patient was 12; yet she was able to carry on to her twenties, marry and have three children. Her breakdown in the thirties is the usual period of breakdown for a patient suffering from a paranoid type of schizophrenia.

GREENISH DISCHARGE FROM BREASTS

To the Editor:—A patient with congestion of both breasts can express a greenish serous discharge from them. Other abnormalities were not found on complete physical examination. She is 35 years old with menses every 28 days, lasting one or two days, with slight midmenstrual leukorrhea. She has no children and for two years has tried to become pregnant. Advice as to treatment would be appreciated. Treatment with estrogen, dihydrostreptomycin, testosterone and progesterone has failed to reduce the congestion of the breast or the discharge from the nipple.

M.D., Connecticut.

ANSWER.—This patient presents several problems, namely, the congested breast, the discharge from the nipple and sterility. It is not unusual to find metaplasia of the breast in women of this age who have not conceived. It would be wise, therefore, to subject this woman to thorough investigation for the cause of her infertility. The outline of such an investigation can be found in any standard obstetrics and gynecology textbook. If she were to conceive, the breast, after lactation, would probably return to normal. In the meantime a great deal of relief can be afforded the patient by placing her on a salt-free diet and giving her large doses of ammonium chloride, 1 Gm. four times daily, until the breasts have softened. The discharge is probably not an infection, but this could be readily determined by examination of some of the exudate after proper preparation of the nipple before expression of secretion. Greenish serous discharge is frequently present in chronic cystic mastitis and causes the development of cysts, which are found on tissue examination. In all probability the discharge will respond to the treatment for the relief of the congestion. Further endocrine therapy should not be attempted, as it might aggravate the condition.

INFECTIOUS MONONUCLEOSIS AND BELL'S PALSY

To the Editor:—A 17 year old white girl complained of headache, fever, severe sore throat and lymphadenopathy of the cervical, axillary and inguinal areas. The spleen was palpable. Infectious mononucleosis was suspected, and a peripheral blood smear confirmed the suspicion. Her throat remained sore, and a membrane developed about two weeks after onset of the illness. A throat smear revealed only the usual organisms of the nasopharynx. Taste sensation was normal on the anterior surface of the tongue. The patient improved and was ambulatory in the third week; then peripheral Bell's palsy developed. What is the incidence of this neurological complication in mononucleosis? Could it be attributed to the prolonged sore throat in this case?

Paul A. Newton, M.D., Oakland, Calif.

ANSWER.—Central nervous system involvement in infectious mononucleosis is common. Serous meningitis, encephalitis, encephalomyelitis and isolated or diffuse upper and lower motor neuron lesions have been described. There are reports of spinal fluid changes, such as pleocytosis, increased pressure and increased protein in as high as 50 to 90 per cent of some series. Neurological changes most often occur two to four weeks after the onset of the disease; in occasional cases these have preceded adenopathy and lymphocytosis by as long as two weeks. Recovery from the neurological aspects of infectious mononucleosis is usually complete in one to four weeks, but rare instances of permanent damage have been observed. Five cases of facial palsy are found in the literature. In one of the first two, described by Gsell (1937), there was bilateral involvement. In another case, described by Zohman (1942) the disease was associated with diffuse lower motor neuron lesions. It seems probable that the palsy in the patient described is the direct result of the "neurotoxic" properties of the infectious mononucleosis virus rather than direct extension of the inflammation from the throat.

SUDDEN SENSATION OF ROTATION OF OBJECTS

To the Editor:—A 56 year old man suffered suddenly, for 10 seconds, the sensation of rotation (with 45 degrees) of all objects, but only with the image of the left eye. This was accompanied with vertigo and was followed during the whole day by headache and tiredness. There were no other symptoms. All his life he had tendency to vasomotor lability. He had a positive skin reaction to brucellin and rheumatoid pains which improved with injections of brucellin. For years he had experienced attacks of mild colitis, probably of amebic origin, which had the usual treatment. Blood pressure is 140/80. General and neurological examinations do not reveal abnormalities. Wassermann and Kahn reaction of the blood were negative (one year ago). The patient smoked moderately some years ago but does not smoke at present. He takes alcoholic beverages in moderate amounts.

D. A. Hachenburg, M.D., Ecuador.

ANSWER.—Transitory rotation sensation affecting objects seen with the left eye and vertigo and headache lasting for only the one day suggest a temporary pressure inside of the right cortex; this could well be on a vascular basis, as is widely believed about similar symptoms in migraine. If it really is of the same nature as migraine, one must hesitate to draw conclusions as to the efficacy of any treatment of accompanying conditions, no matter how definite they are and/or how helpful the treatment of them has been. The symptoms could, of course, be the earliest evidence of aneurysmal pressure or brain tumor, despite the absence of significant changes.

PAIN IN FOOT

To the Editor:—Six months ago tests showed that my wife had a blood sugar level of 290 mg. per 100 cc. with extreme pain in the right leg and foot. The sugar value became normal in two days with insulin therapy. The foot became ash gray, and gangrene threatened. However, after three weeks and a sympathectomy the foot responded. Now, after six months, the foot looks well but occasional edema develops and lasts a few days. While the pain has decidedly lessened, especially during the daytime, there still remain paroxysms of pain during the night, and sleep is induced with meperidine hydrochloride. An average of 150 mg. is required each night. Two months ago about 250 mg. were necessary during the night. Is there anything else available to rid this foot of pain? Multiple vitamin preparations are being used without effect. Is soaking the foot in moderately heated water objectionable?

M.D., Pennsylvania.

ANSWER.—The lancinating pain at night may well be due to a diabetic neuropathy; tendon reflexes may be absent, and studies of sensation and vibratory sense are in order. Biweekly injections of vitamin B_{12} (15 gammas for each dose) have shown promise. Unless the circulation deteriorates, the nerve lesion may gradually enter a painless stage. Narcotics should be avoided at all costs. Soaking in tepid water is not objectionable but is usually without benefit and may macerate the skin.

ONE SHORT LIMB

To the Editor:—A high school girl, 15½ years, weight 122 pounds, height 5 feet 4 inches, has slight curvature of the spine and a limb 1¾ inches short. The radiologist states that she has attained full growth and that there is no tuberculosis or other disease of the bones. The orthopedist has advised shortening the longer limb, which he states will entail six months in a cast and two months on crutches. This would prevent the girl's going to school this fall and graduating with her class. Would a lift overcome her condition for the present?

James R. Stringham, M.D., Cheboygan, Mich.

ANSWER.—There is no clue as to the cause of the inequality of leg length. The girl has waited too long already, but she can continue to temporize if her pelvis is properly balanced. This can be determined best by examination of the levels of the gluteal creases while she stands. This method is more accurate than any form of tape measure examination. In regard to equalization by surgical treatment, she will have to resign herself to delaying either part of her education or her vacation. She should try a platform shoe on one foot and a nonplatform shoe on the other. If she wears high heels she should add 1 inch on the short side and take ¾ inch off the normal side. If she wears low heels, she should add 1½ inches to the short side. The "make" of shoe is not as important as the size and shape. The shoe should look like her foot and have the same dimensions.